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MISSOURI EMPLOYMENT OUTLOOK

PROJECTIONS TO 1985

MISSOURI DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
DIVISION OF EMPLOYMENT SECURITY

OES
OCCUPATIONAL EMPLOYMENT STATISTICS

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MISSOURI EMPLOYMENT OUTLOOK

PROJECTIONS FOR 1985

The Occupational Employment Projection Project is a cooperative effort of the U.S. Department of Labor's Bureau of Labor Statistics and Employment and Training Administration and the Occupational Employment Statistics Unit, Research and Analysis Section of the Missouri Division of Employment Security, Department of Labor and Industrial Relations, Box 59, Jefferson City, Missouri 65104.

NOTE: This publication replaces the Missouri Employment Outlook published in January 1978.

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INTRODUCTION

This report presents industry and occupational employment projections to 1985 for the State of Missouri. These projected employment estimates are based upon a historical employment series through calendar year 1976. For a more detailed explanation of the methods used to prepare these estimates, refer to the Methodology.

The industry data is published according to the Standard Industrial Classification Manual, 1967 Edition. This manual (which has been superseded by the 1972 edition) is one of several editions developed for use in classifying establishments by the type of activity engaged in. The Standard Industrial Classification covers the entire field of economic activities, i.e., agriculture, construction, manufacturing, trade, etc., by two, three and four digit codes.

The 2-digit codes represent major industry groups. The 3-digit codes are breakdowns of the 2-digit groups. The 4-digit codes are even finer breakdowns of the 3-digit industry groups.

The industry employment figures were adjusted to the "one person, one job" concept by excluding the secondary jobs of multiple job holders and by adding an estimate of workers with a job but on unpaid leave in each industry. Also added in were estimates for self-employed and unpaid family workers. Government workers involved in activities unique to government were classified in the public administration sector. Government workers engaged in activities also carried out by private enterprise such as education, medical services, etc. were classified in the appropriate industry category, regardless of whether they were paid from private or public funds.

BACKGROUND

The FY 1978 State and Area Projections Program is the third round of occupational demand projections. This program uses the matrix-based methodology developed by the U. S. Department of Labor's Bureau of Labor Statistics (BLS) in the late 1960's. The program was established to project trends in occupational demand, at the local, state, and national levels, primarily for manpower planning purposes.

There are several reasons why estimates of future manpower requirements are needed. The recommendations made by vocational counselors depend to a great extent on projected industrial and occupational needs. Persons responsible for the creation, expansion or curtailment of specific training programs make their decisions based upon employment expectations in future years. The waste of money and time in preparing persons to enter declining or limited-growth occupations can be reduced by knowledge of projected labor market characteristics.

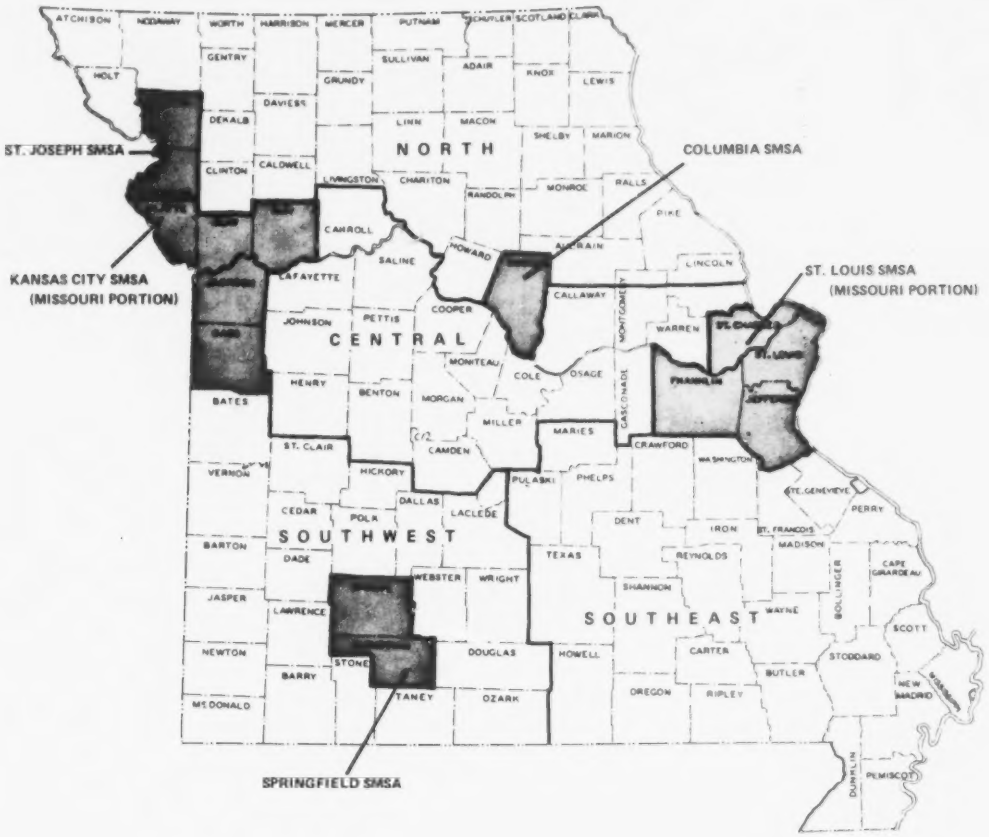
The first round of occupational demand projections (1973) was based upon certain economic assumptions (see Department of Labor, Bureau of Labor Statistics' publication, Monthly Labor Review, December 1973). Significant changes in the economy, primarily the Arab oil embargo of 1973-74 and the recession of 1974-75, mandated changes in the economic assumptions. As an example, the earlier set of projections assumed that unemployment would reach 4.0 percent by 1975 and would remain at that level until 1985. The actual rate for 1975 was more than double (8.5 percent) the earlier assumed rate or 4.0 percent. National assumptions of economic conditions on which the current projections are based, include many variables. One variable is labor force.

In the original assumption, the labor force was expected to reach 101,908,000 by 1980 due to a growth of 1.7 percent between 1972-80. Under the revised assumptions the labor force is expected to reach 103,310,000 by 1980 due to a growth of 1.82 percent between 1973-80. Growth from 1980-85 has been revised from 1.1 percent to 1.22 percent.

The basic national assumptions 1/ by the Bureau of Labor Statistics (upon which these projections are based) include:

1) The national unemployment rate is expected to decline to 4.7 percent by 1980 and to 4.0 percent in 1985. This assumed recovery involves relatively sharp decreases in the unemployment rate to 1980 followed by much smaller annual changes to 1985.
2) The number of employed persons is expected to increase by 1.8 percent from 1973 to 1980 and by 1.4 percent from 1980 to 1985.
3) The Federal Government will follow stimulatory tax and expenditure policies to achieve full recovery from the 1974-75 recession. Real Gross National Product (GNP) will increase at an average rate of 3.8 percent during the 1974-85 period.
4) Energy will be relatively more expensive. The price of a barrel of crude oil will rise to $9.00 by 1985 (weighted market price in 1973 dollars), compared to about $3.70 in 1974.
5) Efforts to solve major domestic problems (air and water pollution, solid waste disposal, urban congestion, etc.) may consume more productive resources but will not have more than a marginal effect on long-term growth.
6) The institutional framework of the U.S. economy will not change radically.
7) Current social, technological, and scientific trends will continue, including values placed on work, education, income, and leisure.
8) No major event such as widespread or long-lasting energy shortages or war will significantly alter the industrial structure of the economy or alter the rate of economic growth.

1/ The effects of the assumptions being in error are unknown.



The effect of the changed energy outlook on labor productivity, capital requirements and prices as well as the relationship of this change to economic growth are complex issues, and not yet fully understood. Although a great deal of effort was devoted to these questions, BLS has not developed a satisfatory method of dealing with them in industry and employment projections. Clearly, further research and analysis is required. Users of this publication should be aware of this.

For additional information refer to the March and December 1976 issues of Monthly Labor Review.

GEO–ECONOMIC PROFILE

Statistics presented in this publication show present and projected employment levels for the state of Missouri. This geographic-economic profile describes six separate but related areas located wholly or mainly within the state. These areas are: the St. Louis SMSA (Standard Metropolitan Statistical Area), the Kansas City SMSA, the northern half of Missouri with one SMSA, (St. Joseph), the southwestern one-fourth with one SMSA, (Springfield), the central Missouri area with one SMSA, (Columbia), and the southeastern area which is largely rural with mining and agriculture as the primary industries.

ST. LOUIS SMSA

Four Missouri counties (St. Louis, Jefferson, St. Charles, and Franklin) and four Illinois counties (Madison, Monroe, Clinton, and St. Clair) plus the City of St. Louis make up the St. Louis SMSA. Slicing through the area are the Missouri and Mississippi Rivers, the latter forming the Missouri-Illinois border.

A wide variety of industries are located in this area. Manufacturing is well represented, producing products such as railroad cars, autos, electrical machinery, aircraft, food, beverages, and wood products with no one industry dominating. Wholesale, retail, and service industries serve the needs of businesses and consumers in and around the area. Connecting this area to all parts of the United States is an extensive railroad network, major highways to all parts of the United States, ten airlines, and river freight via the Missouri and Mississippi Rivers. Approximately eighty-five percent of the SMSA's employment is within the Missouri portion of the SMSA.

Such a variety of business operations demands the skills of many people in varied occupations. The labor market consists primarily of the area within the borders of the SMSA, with a great deal of commuting between the Missouri and Illinois portions. Much commuting into the area also occurs.

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KANSAS CITY SMSA

Kansas City is the heart of the Kansas City SMSA. Jackson, Clay, Platte, Ray, and Cass counties in Missouri and Johnson and Wyandotte counties in Kansas make up the SMSA.

Almost all types of manufacturing, wholesale, retail, financial, and service industries are represented in the industrial makeup of the area. A large number of heavy manufacturing plants are found here. Numerous banking institutions, insurance companies, and federal government regional headquarters are located here. Transportation facilities include: trucking (one of the top ten trucking centers), two large airports served by eight major airlines, eleven railroad lines, and twenty-two docks on the Missouri River. Approximately sixty-five percent of the employment is in the Missouri portion of the SMSA.

A large and diverse labor force is drawn from the immediate and surrounding area to staff plants. Commuting from within a thirty mile radius of the SMSA border is common.

NORTHERN MISSOURI

St. Joseph, Missouri is the largest city in northern Missouri, the county seat of Buchanan County, and the center of activity for the two county (Buchanan and Andrew) St. Joseph SMSA. The area is served by five railroad lines, four highways, and water transportation on the Missouri River. Total employment has remained relatively stable for the past five years. Service industry employment has been growing to serve an expanding population, while manufacturing employment has been declining; however, light manufacturing still dominates the area. Large numbers of the expanding work force commute to jobs in the Kansas City SMSA which joins the St. Joseph SMSA on its southern boundary.

Several medium and many small size towns dot the remainder of north Missouri. Economic activity is primarily agricultural with light manufacturing firms producing goods such as: food, fertilizer, agricultural chemicals, and apparel. Some of the world's largest producers of refractory products are located at Mexico, Wellsville, Farber and Vandalia, Missouri.

SOUTHWESTERN MISSOURI

Southwestern Missouri, consisting of the area from the western borders of Howell, Texas, and Pulaski counties extending north to the southern border of Miller County then west to the northern border of Bates County, contains the Springfield SMSA consiting of Greene and Christian Counties. This area is a trade center for a large part of southwestern Missouri. Light manufacturing and recreation also comprise a large portion of the area's economic activity. Five colleges are located in the city of Springfield. Two major highways, two airlines, and two railroad lines (Frisco Railroad's home office is here) serve the area. The SMSA's labor force is drawn primarily from within its borders; however, some commuting from surrounding areas (including Joplin, Missouri) does occur.

The extreme southwestern corner of the state is dominated by Joplin and its two neighboring towns of Carthage and Neosho. These towns have considerable manufacturing and draw their work force from the bordering areas of Kansas and Oklahoma as well as the immediate area. The three towns are the educational, recreational, and trade centers for this three state border area.

SOUTHEASTERN MISSOURI

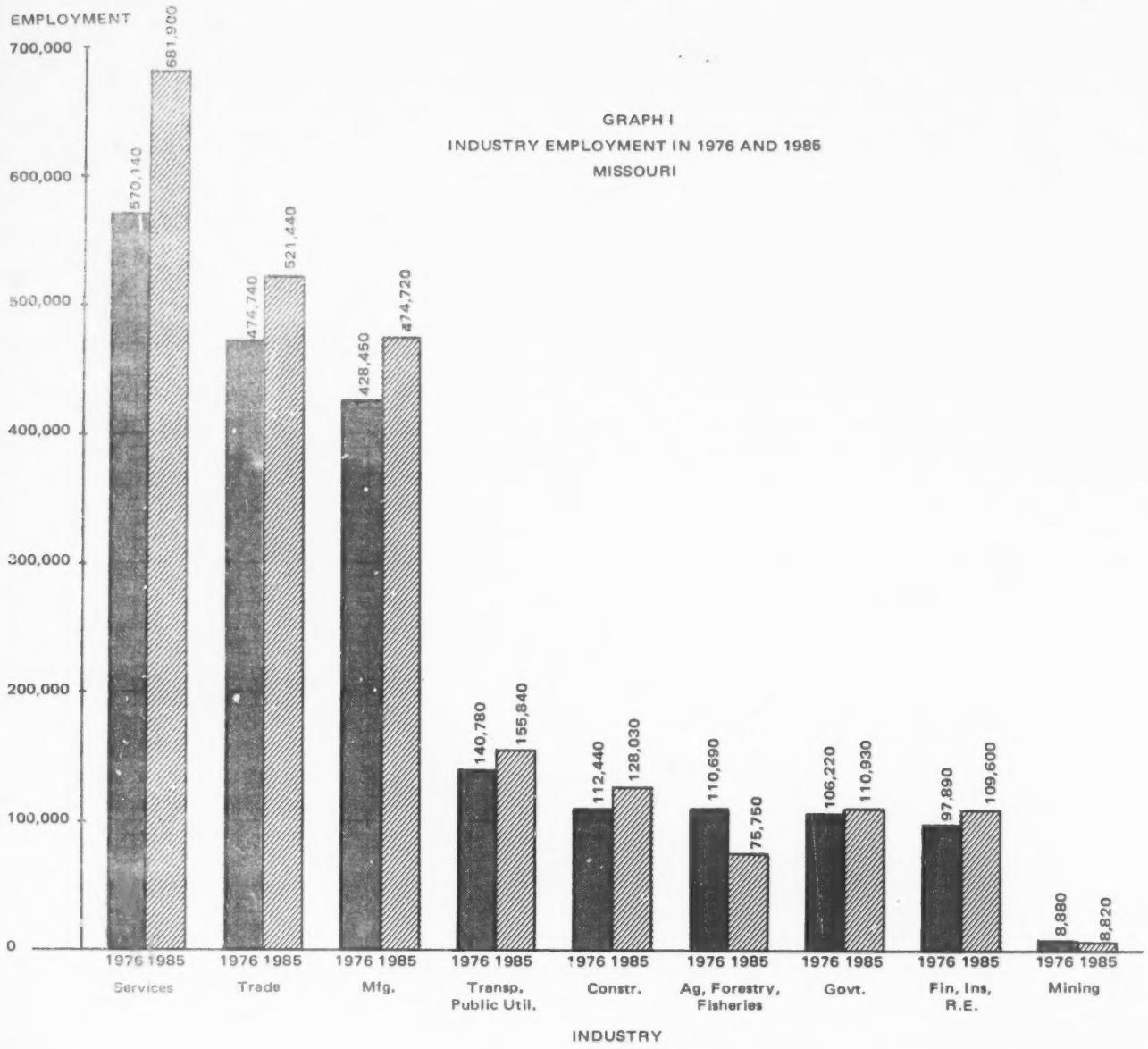
Southeastern Missouri, having a northern border formed by the southern county lines of Osage, Gasconade, Franklin, and Jefferson Counties, consists of two markedly different economic and geographic areas. The Bootheel area, containing extremely rich farm lands, has basically an agricultural economy. In contrast, the remainder of southeastern Missouri is a rugged, heavily forested area with mining, light manufacturing, and some farming. Mining operations, centered in Dent, Reynolds, Iron, Crawford, Washington, Madison, and St. Francois Counties, produce lead, iron, zinc, and other minerals. This area is becoming one of the world's leading mining districts. Manufacturing firms are usually located in or near towns and dominate these towns' labor markets. Fort Leonard Wood, one of the largest army posts in the United States, supports a major portion of nonagricultural employment in Pulaski County and draws some employees from surrounding areas.

CENTRAL MISSOURI

Three counties (Boone, Cole, and Callaway) are the most heavily populated part of the central Missouri area. Boone County's border encircles the officially designated Columbia SMSA; however, the three counties' economies are very intertwined. Columbia, Jefferson City, and Fulton are the economic centers and county seats of Boone, Cole, and Callaway Counties, respectively. Government, service, and trade industries dominate the area's economies. Columbia is best known for the University of Missouri and the two private colleges located there. Columbia is also a leading medical and trade center. Fulton contains two private colleges, some manufacturing, and a large state mental hospital. Jefferson City, the state capital, is the home of Lincoln University, the site of five large state office buildings, contains a state penitentiary, two outlying prison farms, and a large portion of the area's manufacturing firms.

What is commonly referred to as the Lake of the Ozarks area is located immediately southwest of Cole County. The Lake of the Ozarks spreads over thousands of acres of what was formerly Ozark bottom land along the Osage and Niangua Rivers and other smaller tributaries. The lake was formed in 1931 by consturction of Bagnell Dam, located on the Osage River about 38 miles southwest of Jefferson City. This lake extends from the western part of Miller County into Camden County to the southwest and into Morgan County to the northwest of Bagnell Dam. It also extends along the Osage River Channel to the west through Benton County. This is the largest water impoundment in the State with 1,375 miles of shoreline. Numerous roads have been developed around the lake connecting major highways to its shoreline.

Since its formation to the present time, the area around Lake Ozark has developed as a major recreation area of the nation. At present there are over 300 lakeside resorts, hotels and motels including five luxury resorts. Construction of private homes and



cottages has been estimated to be worth close to six million dollars annually for the most recent ten years.

Farming is the primary economic activity in remaining parts of central Missouri. Four highways, an intercity airport, four railroad lines, and water freight on the Missouri River provide transportation facilities for the area. A great deal of commuting occurs between the Columbia-Jefferson City-Fulton areas and from surrounding areas.

INDUSTRY IN MISSOURI

In 1976 an estimated 2,050,230 people were employed in Missouri. By 1985 this figure could rise to 2,267,020, an increase of about 11 percent. Average annual job openings are projected to be 103,730 with 24,100 from growth and 79,630 from replacement needs.

Growth is projected for all major industries except Agriculture, Forestry, Fisheries and Mining. Between 1976 and 1985, employment in Agriculture, Forestry, Fisheries could drop by around 35,000. Mining is projected to hold relatively stable during the time period.

By far the largest industries in the state are Services, Trade, and Manufacturing, with Services leading the group. In 1976 almost 28 percent of those working had jobs in the Service Industry. If current projections are correct, this percentage will rise to 30 percent by 1985. Missouri's smallest industry in terms of employment is Mining. It is estimated that less than 1/2 of 1 percent of all those working in the state are employed by Mining firms.

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Major industries and their shares of total employment are:

	Percent of Total	
	1976	1985
Services	27.81	30.03
Trade	23.16	23.01
Manufacturing	20.90	20.94
Transportation, Public Utilities	6.87	6.88
Construction	5.49	5.65
Agriculture, Forestry, Fisheries	5.40	3.35
Government	5.18	4.90
Finance, Insurance, Real Estate	4.78	4.84
Mining	.44	.39

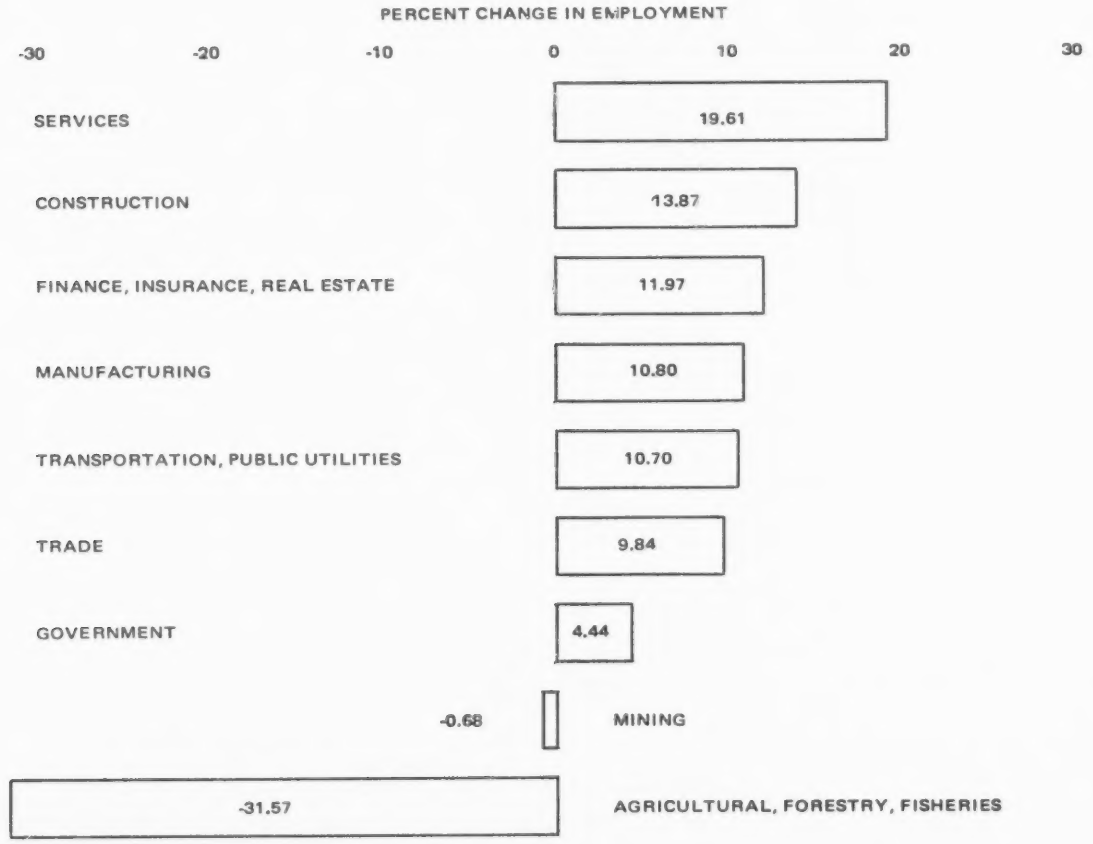
Graph 1 depicts total employment for these industries in 1976 and 1985. Percentage changes between the two years are shown in Graph 2.

Industries in this publication are classified according to the Standard Industrial Classification Manual, 1967 edition.

Due to events that have occurred since the projections were made, it is questionable whether or not some industries will change as much as projected. Where possible, we have attempted to describe these situations in the text.

NOTE: The industry employment level for 1980 is generally a simple interpolation of the projected long-run (1976-1985) labor market trend and should not be interpreted as representing cyclical fluctuations in the economy. Sums of items may not equal totals because of rounding.

GRAPH 2
PROJECTED MISSOURI INDUSTRIAL EMPLOYMENT GROWTH RATES
1976 TO 1985



AGRICULTURE, FORESTRY, FISHERIES 1/
SIC 01, 07, 08, 09

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Agriculture, Forestry, Fisheries	110,690	95,170	75,750	-34,940	-3,880
Agriculture	109,630	94,110	74,680	-34,950	-3,880
Agricultural Production	99,570	84,930	66,600	-32,980	-3,660
Services, Exc. Horticulture	6,580	5,940	5,170	-1,410	-160
Horticultural Services	3,480	3,240	2,910	-570	-60
Forestry	660	660	680	20	0
Fisheries	400	400	380	-20	0

1/ Sums of items may not balance due to rounding.

Employment in Agriculture, Forestry, and Fisheries is projected to decline by about 35,000 during the 1976-85 period. Of the nine major groups, this industry ranked 6th in employment in 1976. If current indications are correct, Agriculture, Forestry, and Fisheries will drop to 8th place by 1985. Only Mining is expected to employ fewer people.

Some of the factors which may contribute to a decline in Agriculture, Forestry, and Fisheries are the continuing consolidation of small farms; conversion of some farm land to other uses such as housing developments and shopping centers; and greater use of labor-saving machinery, methods, and materials.

MINING 1/
SIC 10, 11, 12, 13, 14

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Mining	8,880	8,840	8,820	-60	-10
Metal Mining	3,290	2,850	2,300	-990	-110
Coal Mining	1,460	1,740	2,080	620	70
Crude Petroleum, Natural Gas, Nonmetallic, Mining, Quarrying	4,120	4,280	4,440	320	40

1/ Sums of items may not balance due to rounding.

Employment in the Mining Industry is projected to remain relatively stable through the 1976-85 time period. Reduced employment in some sectors should be offset by growth in others.

Among the ores mined in Missouri are coal, lead, zinc, copper, iron, silver, limestone, clay, silica sand, granite and phosphate. Imports of finished products and raw materials as well as the activity of the Construction Industry (which at the time of this writing was experiencing a slump) will determine the future of Mining and may cause employment in the mid-1980's to differ significantly from our projections.

CONSTRUCTION 1/
SIC 15, 16, 17

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Construction	112,440	119,360	128,030	15,580	1,730
General Building Contractors	27,420	28,380	29,550	2,130	240
General Contractors, Excluding Building	32,690	35,930	39,970	7,280	810
Special Trade Contractors	52,330	55,090	58,510	6,180	690

1/ Sums of items may not balance due to rounding.

Employment in Construction is projected to increase approximately 14 percent over the 9-year period, rising from about 112,440 in 1976 to 128,030 in 1985.

Tight money and high interest rates are currently putting a damper on building. Single-family housing is being affected most. An easing of the money situation, however, could result in Construction employment rising substantially.

At this time, the prime rate is beginning to decline and housing shortages are developing in some areas. Based on these indications, it would seem that construction activities will be increasing in the early 1980's when money for home loans becomes available. The projected figures could very well be reached.

MANUFACTURING 1/
SIC 19 through 39

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Manufacturing	428,450	449,010	474,720	46,270	5,140
Durable Goods	238,920	254,560	274,140	35,210	3,910
Non-Durable Goods	189,530	194,450	200,590	11,060	1,230

1/ Sums of items may not balance due to rounding.

From 1976 to 1985, employment in Manufacturing is projected to increase approximately 11 percent (+46,270). About three-fourths of the gain is expected in the Durable Goods sector. All of the major Durable Goods Manufacturing Industries except Stone, Clay, and Glass Products are projected to grow, led by Transportation Equipment (+14,330).

Most Nondurable Goods Manufacturers are also expected to add workers through the mid-1980's. The greatest increase is expected in Printing and Publishing. Textiles and Apparel are the only two major industries in which declines are anticipated.

DURABLE GOODS 1/
SIC 19, 24, 25, 32, 33, 34, 35, 36, 37, 38, 39

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Durable Goods	238,920	254,560	274,140	35,210	3,910
Lumber and Wood Prod.	11,390	12,150	13,080	1,700	190
Logging	1,780	1,820	1,850	70	10
Sawmill, Planing Mill, Mill	5,720	6,120	6,650	930	100
Misc. Wood Prod.	3,890	4,210	4,590	690	80
Furniture and Fixtures	8,080	8,760	9,590	1,510	170
Stone, Clay, Glass Prod.	12,390	11,790	11,070	-1,320	-150
Glass and Glass Prod.	1,190	1,150	1,070	-130	-10
Cement, Concrete, Plaster	5,820	5,540	5,220	-610	-70
Structural Clay Prod.	3,470	3,310	3,090	-380	-40
Pottery, Misc. Monmetallic Mineral & Stone Products	1,900	1,820	1,700	-210	-20
Primary Metal Industries	14,410	15,530	16,930	2,520	280
Blast Furnaces, Steel Workers and Other Primary Steel	9,380	10,100	11,020	1,640	180
Primary Aluminum Ind.	1,970	2,130	2,310	340	40
Other Primary Nonferrous	3,070	3,310	3,600	540	60
Fabricated Metal Prod.	28,760	30,280	32,160	3,400	380
Cutlery, Other Hardware	1,730	1,810	1,930	200	20
Fabricated Metal Prod.	11,790	12,430	13,190	1,400	160
Screw Machine Prod.	1,180	1,260	1,320	140	20
Metal Stamping	2,600	2,720	2,910	310	30
Misc. Fabricated Metal Prod.	11,460	12,060	12,810	1,350	150
Machinery, Exc. Electrical	36,090	37,010	38,170	2,090	230
Farm Machinery, Equipment	3,170	3,250	3,340	180	20
Construction Machines	3,880	3,980	4,100	220	20
Metalworking Machinery	4,610	4,730	4,870	260	30
Other Machinery Exc. Electrical	24,440	25,080	25,860	1,430	160
Electrical Machinery	42,410	45,690	49,820	7,410	820
Household Appliances	6,160	6,640	7,230	1,070	120
Radio, TV, Commun. Equip.	8,740	9,420	10,280	1,540	170
Electrical Machinery, NEC	27,520	29,640	32,320	4,800	530
Transportation Equipment	66,770	73,130	81,100	14,330	1,590
Motor Vehicle Equip.	32,070	35,150	38,970	6,900	770
Other Transportation Equip.	34,700	38,020	42,130	7,430	830
Prof., Scientific Instruments	7,130	8,130	9,380	2,250	250
Ordnance & Misc. Manufacturing	11,500	12,100	12,840	1,340	150

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

Between 1976 and 1985, employment in Durable Goods Manufacturing is projected to increase about 15 percent (+35,220). Growth is projected for all major groups except Stone, Clay, and Glass. Based on 1978 employment levels in Stone, Clay, and Glass, however, it seems unlikely that the group will decline. All sectors showed some growth over the 1976-78 period. The industry is largely dependent on Construction, however. A long-term slump in the building industry could have a detrimental impact on Stone, Clay, and Glass.

Projected employment in three of the other major industries may also have been underestimated. By 1985 the number working in Machinery, Except Electrical may be up to 7,000 higher than initially projected. Based on 1978 figures, it appears that projected employment in both Construction Machines and Other Machinery, Except Electrical should be revised upward by about 1,000 and 6,000 respectively. Two factors that could have a moderating influence are continuation of high interest rates and tight money. Under these conditions, businesses may forego new machinery purchases.

The 1980 and 1985 employment levels for Electrical Machinery may also have been understated. In 1978, it was estimated that Electrical Machinery Manufacturers throughout

Missouri employed approximately 51,400 workers -- 9,700 in Household Appliances; 11,000 in Radio, T.V. and Communication Equipment; and 34,700 in Electrical Machinery, N.E.C. While the 1978 employment for Household Appliances was below the 1976 level, employment for the other two sectors exceeded the 1985 projections. By the mid-1980's the number working for manufacturers of Radio, T.V. and Communication Equipment and of Electrical Machinery, N.E.C. could rise to 13,000 and 43,000, respectively. Firms producing Household Appliances will probably experience some growth through the mid-1980's. This may be minimal, however, if the tight money and high interest rates persist. Under these circumstances, people will be more apt to forego discretionary purchases than in the past.

Projected employment in Transportation Equipment may also have been underestimated. In 1978 close to 77,600 people worked in the industry. That figure exceeds the 1985 projection by about 3,500.

Motor Vehicles and Motor Vehicle Equipment Manufacturers employed about 40,800 in 1978, some 1,800 more than projected for 1985. The immediate future of Transportation is uncertain, however, due to the energy situation and the high rate of inflation. Auto sales are down. People are driving less and are not trading cars as often. One factor that could help the industry is the growing demand for smaller, more fuel-efficient vehicles. The development of major mass transit systems could also add to the industry but probably not substantially within the next five years.

An increase in Federal Defense spending, announced after the projections were prepared could mean a greater growth in Ordnance and Miscellaneous Manufacturing than was initially projected.

NON-DURABLE GOODS 1/
SIC 20, 22, 23, 26, 27, 28, 29, 30, 31

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Non-Durable Goods	189,530	194,450	200,590	11,060	1,230
Food and Kindred Prod.	46,260	46,940	47,740	1,490	170
Meat Products	8,900	9,020	9,210	300	30
Dairy Products	7,230	7,310	7,450	220	20
Canning and Preserving	3,300	3,340	3,400	100	10
Grain-Mill Products	8,050	8,170	8,300	260	30
Bakery Products	6,760	6,840	6,960	210	20
Confectionary Products	1,490	1,530	1,540	50	10
Beverage Industries	7,790	7,910	8,050	260	30
Misc. Food Preparation	2,750	2,790	2,840	90	10
Textile Mill Products	1,300	1,140	970	-330	-40
Apparel, Textile Products	30,790	29,150	27,100	-3,690	-410
Apparel and Accessories	27,690	26,210	24,360	-3,330	-370
Misc. Fabricated Products	3,100	2,940	2,740	-360	-40
Paper and Allied Products	12,840	13,320	13,900	1,060	120
Pulp, Paper, Paperboard Mills and Misc. Paper & Pulp Prod.	5,990	6,230	6,490	500	60
Paperboard Containers, Boxes	6,850	7,090	7,420	560	60
Printing & Publishing	35,200	37,280	39,850	4,650	520
Newspaper Publishing, Printing	10,020	10,620	11,340	1,320	150
Printing, Publishing, Exc. News	25,180	26,660	28,510	3,330	370
Chemical and Allied Products	28,530	29,770	31,310	2,790	310
Industrial Chemicals	14,150	14,750	15,530	1,380	150
Plastics, Synthetics and Misc. Chemicals	2,710	2,830	2,970	260	30
Drugs and Medicines	3,900	4,060	4,290	390	40
Soaps and Cosmetics	3,320	3,480	3,640	320	40
Paints, Varnishes	2,630	2,750	2,890	260	30
Agricultural Chemicals	1,820	1,900	1,990	180	20
Petroleum & Coal Products	2,060	2,100	2,160	100	10
Rubber, Misc. Plastic Products	10,000	11,720	13,870	3,880	430
Rubber Products	2,640	3,080	3,660	1,020	110
Misc. Plastic Products	7,350	8,630	10,210	2,860	320
Leather Products	22,550	23,070	23,670	1,130	130
Leather Tanning, Finishing & All Other Leather Products	2,950	3,030	3,090	140	20
Footwear, Exc. Rubber	19,600	20,040	20,580	980	110

1/ Sums of items may not balance due to rounding.

Between 1976 and 1985, employment in the Nondurable Goods Manufacturing Industry is projected to increase about 6 percent (+11,060). All major components except Textile Mill Products and Apparel, Textile Products are expected to grow. The largest increase is projected for Printing and Publishing, followed by Rubber, Miscellaneous Plastics Products and Chemical and Allied Products. One factor that could moderate growth in Printing and Publishing is a slowdown in the economy. Advertising expenditures are apt to drop significantly during recessionary periods. Employment in Printing and Publishing would probably be affected.

Most growth in Rubber and Miscellaneous Plastic Products will come from the Plastics sector. Plastics, which are lightweight, durable, and relatively inexpensive, are attractive to many producers who seek to keep down costs of their products and make them more fuel-efficient. The industry uses large quantities of fossil fuels, however. High costs and limited supplies of these fuels could have a major impact on the industry.

The Chemical Industry, too, is a major user of fossil fuels. Other factors that may moderate growth in Chemicals are a long-term recession and a slowdown in construction. In a

recession, some manufacturing activities decline. Industrial chemical orders may fall off. A slowdown in construction could adversely affect Paints, Varnishes producers. Employment reductions in these sectors should be largely offset by growth in Drugs, and Medicines, though. In 1978, the estimated employment for Drugs and Medicines almost equalled the 1985 projection. A projected figure of 4,800 to 5,000 for 1985 would probably not be out of line.

From 1976 to 1985 manufacturers of Textiles and Apparel in Missouri may reduce their employment by roughly 13 percent. This expected reduction is attributed to rising imports and competition from manufacturers in other states, primarily those in the South.

TRANSPORTATION, OTHER PUBLIC UTILITIES 1/
SIC 40 - 42 and 44 - 49

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Transportation, Other Pub. Util.	140,780	147,460	155,840	15,060	1,670
Transportation, Total	87,490	91,770	97,150	9,660	1,070
Railroads	16,890	16,730	16,540	-350	-40
Local, Interurban Transit	10,110	10,630	11,270	1,160	130
Street Railways, Bus Line	7,910	8,350	8,860	940	110
Taxicab Service	2,190	2,270	2,410	220	20
Trucking and Warehousing	39,490	42,370	45,970	6,490	720
Trucking Services	37,150	39,870	43,230	6,070	680
Warehousing and Storage	2,340	2,540	2,750	410	50
Water Transportation	3,390	3,790	4,330	940	100
Air Transportation	14,890	15,530	16,330	1,440	160
Other Transportation & Trans. Services	2,740	2,740	2,730	-10	0
Communications, Util., Sanita.	53,290	55,690	58,690	5,400	600
Communications	25,390	27,230	29,570	4,180	460
Telephone (Wire & Radio)	20,380	21,860	23,740	3,360	370
Telegraph, Misc. Commun. Ser.	1,540	1,660	1,790	250	30
Radio Broadcasting, TV	3,470	3,710	4,040	560	60
Utilities, Sanitary Services	27,900	28,460	29,120	1,230	140
Electric Light and Power	10,520	10,680	10,860	330	40
Electric-Gas Utilities	2,640	2,680	2,710	70	10
Gas, Steam Supply Systems	4,650	4,690	4,770	120	10
Water Supply, Inc. Irrigation	4,420	4,580	4,730	320	40
Sanitary Services	5,670	5,830	6,050	390	40

1/ Sums of items may not balance due to rounding.

Transportation and Other Public Utilities is projected to increase about 11 percent (+15,060) between 1976 and 1985. The greatest gains are projected for Transportation. Trucking and Warehousing may see particularly large growth (+6,490 people or more than 16 percent during the 9-year period). The immediate future of Transportation is uncertain, however, due to the energy situation. Mid-1980's employment may not reach estimated levels. While mass transit systems will undoubtedly gain support, operators will be forced to limit routes and services to those which are most profitable, i.e., have the greatest patronage.

Employment in Communications, Utilities, and Sanitary Services is projected to grow roughly 10 percent during the 9-year projection period. Should construction activities remain depressed through the early 1980's (as they were in 1979), the Utilities, Sanitary Services sector may not grow as much as projected.

WHOLESALE AND RETAIL TRADE 1/
SIC 50, 52 - 59

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Wholesale and Retail Trade	474,740	495,500	521,440	46,690	5,190
Wholesale Trade	113,340	117,820	123,430	10,090	1,120
Retail Trade	361,410	377,690	398,010	36,600	4,070

1/ Sums of items may not balance due to rounding.

Employment in Wholesale and Retail Trade is projected to increase about 10 percent (+46,690) from 1976 to 1985. The largest increases are projected for Food and Related Products and Machinery, Equipment and Supplies in the Wholesale sector and for Eating and Drinking Places, General Merchandise, and Food and Dairy Stores in the Retail portion. Factors that could limit expansions are continued high inflation and interest rates, which reduce buying power and discourage loan applications, as well as greater use of automated equipment.

WHOLESALE TRADE 1/
SIC 50

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Wholesale Trade	113,340	117,820	123,430	10,090	1,120
Wholesale, Exc. Misc. Wholesale	74,370	77,330	81,010	6,640	740
Motor Vehicles and Equipment	9,460	9,820	10,310	850	90
Drugs, Chemicals, Allied Prod.	5,770	6,010	6,290	520	60
Dry Goods and Apparel	4,500	4,700	4,900	410	50
Food and Related Products	14,560	15,120	15,830	1,270	140
Farm Prod. Raw Materials	4,430	4,590	4,800	370	40
Electrical Goods	7,690	8,010	8,380	700	80
Hardware, Plumbing	4,980	5,180	5,420	450	50
Machinery, Equip., & Supplies	22,990	23,910	25,070	2,090	230
Misc. Wholesale Trade	38,970	40,490	42,420	3,450	380
Metals and Minerals, NEC	4,410	4,610	4,820	410	50
Petroleum Products	3,020	3,140	3,260	240	30
Scrap and Waste Material	2,780	2,860	2,960	190	20
Alcoholic Beverages	1,810	1,890	1,960	160	20
Paper and Its Products	3,110	3,230	3,390	280	30
Lumber, Constr., Materials	6,840	7,120	7,470	630	70
Wholesale, NEC	17,020	17,700	18,570	1,550	170

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

Wholesale Trade employment is projected to increase about 9 percent between 1976 and 1985. Wholesale distributors of Food and Related Products and of Machinery, Equipment and Supplies are projected to add the most workers over the nine-year period. Based on the current economic situation, however, the 1985 projected levels for many of the industries may be somewhat optimistic. Auto sales have fallen off. Should the slump in the construction industry continue, Wholesalers of Electrical Goods; Hardware, Plumbing, and Heating Supplies; and Lumber and Construction Materials will probably be adversely affected. Advertising expenditures could quite possibly decline resulting in lower sales of Paper and Paper Products. Reduced demands for some products considered nonessential may also have an impact on the industry.

RETAIL TRADE 1/
SIC 52 - 59

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Retail Trade	361,410	377,690	398,010	36,600	4,070
Building Materials	21,720	22,160	22,700	980	110
Lumber, Bldg. Material	11,060	11,300	11,590	530	60
Hardware and Farm Equipment	10,670	10,870	11,110	440	50
General Merchandise, Total	71,100	75,300	80,570	9,480	1,050
Department, Mail Order	38,420	40,780	43,770	5,340	590
Limited Price Stores	9,340	9,900	10,570	1,230	140
Vending Machine Operators	1,870	1,990	2,130	250	30
Direct Selling	11,680	12,320	13,130	1,450	160
Misc. Merchandise Stores	9,780	10,300	10,980	1,200	130
Food and Dairy Stores	47,090	48,490	50,260	3,170	350
Grocery Stores	40,770	42,090	43,710	2,940	330
Dairy Prod. Stores	1,400	1,440	1,500	100	10
Retail Bakeries	2,910	2,950	3,010	100	10
Food Stores, NEC	2,020	2,020	2,050	20	0
Auto Dealers, Gas Stations	49,940	50,220	50,600	660	70
Motor Vehicle Dealers	19,030	19,230	19,510	490	50
Tire, Battery, Accessory	6,580	6,620	6,710	130	10
Gas Service Stations	22,030	22,030	22,060	30	0
Misc. Vehicle Dealers	2,310	2,310	2,320	20	0
Apparel and Accessories	20,720	21,160	21,710	990	110
Apparel, Accessories Stores	14,930	15,250	15,640	710	80
Shoe Stores	5,790	5,910	6,070	280	30
Furniture and Appliances	13,850	14,450	15,200	1,350	150
Home Furnishing Stores	7,390	7,710	8,090	700	80
Appliance, TV, Radio Stores	6,460	6,740	7,110	650	70
Eating and Drinking Places	92,300	100,620	111,010	18,710	2,080
Misc. Retail Trade Stores	44,680	45,240	45,970	1,290	140
Drug Stores	10,900	11,180	11,550	660	70
Liquor Stores	3,030	3,030	3,050	30	0
Farm, Garden Supply Stores	6,190	6,350	6,500	310	40
Jewelry Stores	2,940	2,980	3,010	70	10
Fuel and Ice Dealers	2,670	2,750	2,830	170	20
Retail Florists	2,870	2,910	2,930	50	10
Misc. Retail Trade Stores	16,090	16,090	16,090	0	0

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

From 1976 to 1985, employment in Retail Trade is projected to increase about 10 percent (+36,600). By far the greatest projected increase is in Eating and Drinking Places, up more than 20 percent during the 1976-85 time period. At least two factors could moderate this growth, however. First, reduced buying power resulting from the high rate of inflation could cause individuals to view eating out as more of a luxury. In addition, the high cost and limited supplies of gasoline will limit travel. Restaurants and other establishments serving food and drink could be affected.

In general, tight money, inflation, and limited fuel supplies may all be detrimental to Retail Trade. Some sectors will probably feel the impact more than others though. Auto Dealers and Gas Stations, for example, may be particularly hard hit. In addition, Furniture and Appliance Stores may experience reduced sales as more people opt to repair rather than replace major household items.

FINANCE, INSURANCE AND REAL ESTATE 1/
SIC 60 - 67

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Finance, Insurance, Real Estate	97,890	103,090	109,600	11,710	1,300
Finance, Total	42,960	45,960	49,720	6,760	750
Banking	27,350	29,430	32,060	4,700	520
Credit Agencies	10,210	10,730	11,380	1,170	130
Stock Brokers, Investment	5,390	5,790	6,280	890	100
Insurance	33,250	34,330	35,680	2,430	270
Insurance, Loan and Law Office Combinations	21,680	22,800	24,210	2,520	280

1/ Sums of items may not balance due to rounding.

Employment in Finance, Insurance, and Real Estate is projected to increase about 12 percent (+11,710) during the time period from 1976 to 1985. It's estimated that about 40 percent of the increase will occur in Banking. This percentage could be even higher. Based on the 1978 employment level, it appears that the 1985 figure may be conservative. Banks are expected to expand their services and open branch facilities, adding employees through the 1980's.

Projected employment in Credit Agencies Other Than Banks seems also to have been underestimated. The immediate future of this industry is somewhat uncertain, however, because high interest rates are discouraging many from applying for loans.

Employment in the Insurance Industry is projected to increase as the volume of goods requiring protection and the demand for tailor-made insurance packages grow. In addition, individuals born during the baby boom will be establishing families of their own and purchasing insurance for them. This factor plus an expected increase in the number of claims that must be settled will also contribute to growth.

A growth of about 12 percent is projected for Real Estate and Real Estate, Insurance, Loan, and Law Office Combinations. Such an increase may be optimistic should high interest rates and tight money continue to depress the real estate market. The prime interest rate has begun to decline but if and how rapidly it continues to fall remains to be seen.

SERVICES 1/
SIC 70, 72, 73, 75, 76, 78 - 82, 84, 86, 88, 89

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Service, Total	570,140	619,820	681,900	111,760	12,420
Hotels and Lodging Places	28,860	32,780	37,650	8,790	980
Hotels and Motels	20,320	23,840	28,220	7,900	880
Lodging Places, Exc. Hotel	8,540	8,940	9,430	890	100
Other Personal Services	30,850	30,970	31,140	300	30
Laundry, Cleaning	9,770	9,850	9,970	200	20
Beauty Shops	11,100	11,220	11,400	300	30
Barber Shops	3,170	3,010	2,860	-310	-40
Shoe Repair Shops	580	580	580	10	0
Dressmaking Shops	1,090	1,090	1,120	30	0
Other Personal Services	5,130	5,170	5,210	80	10
Misc. Business Services	47,450	59,730	75,040	27,590	3,070
Advertising	3,320	4,160	5,170	1,850	210
Business Mgmnt. Services	6,210	7,690	9,550	3,340	370
Other Misc. Service Incl. Commerical R & D	13,220	16,540	20,660	7,440	830
Computer Programming	2,000	2,560	3,230	1,230	140
Detective and Protective	4,880	6,200	7,890	3,010	330
Employment, Temp. Help	7,970	10,170	12,890	4,920	550
Service, Buildings	9,850	12,450	15,660	5,810	650
Auto Repair Services	15,950	17,590	19,620	3,670	410
Auto Repair	11,170	12,130	13,300	2,130	240
Auto Services, Exc. Repair	4,780	5,460	6,320	1,540	170
Other Repair Services	8,650	8,850	9,060	410	50
Electrical Repair Shops	3,010	3,090	3,170	160	20
Other Repair Services	5,640	5,760	5,890	260	30
Motion Pictures, Theaters	5,760	5,920	6,120	360	40
Misc. Entertainment	12,800	14,400	16,360	3,560	400
Bowling Alleys, Billiards	2,730	3,050	3,480	750	80
Misc. Entertainment	10,070	11,310	12,880	2,810	310
Medical, Other Health	149,280	165,080	184,870	35,590	3,950
Offices of Physicians	15,730	17,570	19,900	4,160	460
Offices of Dentists	6,510	7,190	8,010	1,500	170
Offices of Chiropractors	1,220	1,300	1,350	130	20
Hospitals	96,000	105,800	118,040	22,040	2,450
Convalescent Institutions	18,460	20,740	23,600	5,130	570
Health Practitioners, NEC	1,440	1,560	1,720	280	30
Health Services, NEC	9,920	10,960	12,260	2,340	260
Legal Services	9,170	10,010	11,020	1,840	210
Educational Services	171,260	175,100	179,860	8,600	960
Elementary, Secondary	119,490	122,770	126,890	7,400	820
Colleges and Universities	42,680	43,080	43,540	860	100
Libraries	2,920	3,000	3,120	210	20
Educational Services, NEC	6,180	6,220	6,310	130	10
Museums, Art Galleries, Zoos	1,160	1,200	1,270	120	10
Nonprofit Organizations	41,460	50,380	61,560	20,110	2,230
Religious Organizations	17,960	22,560	28,300	10,340	1,150

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Welfare Services, Incl. Residential Welfare	14,400	16,200	18,440	4,050	450
Nonprofit Membership	9,100	11,660	14,820	5,720	640
Private Households	27,110	24,870	22,050	-5,060	-560
Other Prof., Related Services	20,400	23,040	26,290	5,890	660
Eng. and Arch. Services	8,780	10,020	11,590	2,820	310
Accounting, Auditing	8,740	9,860	11,290	2,550	280
Misc. Prof. Services	2,880	3,120	3,410	530	60

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

The Services Industry is the largest employer in Missouri. During the 1976 to 1985 time period, employment is projected to increase by around 20 percent (111,760). The largest employment increase is projected for the Medical and Other Health Industry, up almost 24 percent (+35,590) between 1976 and 1985. Among the factors contributing to this projected increase are an increase in the number of elderly, coverage of more people by health insurance programs, and growth in the fields of public health, rehabilitation, industrial medicine, and mental health. The largest sector of the Medical, Other Health Industry is Hospitals. By 1985, approximately 118,040 may work in Hospitals, an increase of about 23 percent over the 1976 employment estimate. Factors that could moderate growth are passage of the Hospital Cost Containment Bill (or similar legislation) and coverage by insurance programs of more out-patient services.

An increase of almost 60 percent (+27,590) is projected for Miscellaneous Business Services. As organizations become larger and more complex, their needs for services will rise. For many it will be more economical to use the expertise and equipment of outsiders than to train personnel and purchase uniforms, machinery, and supplies of their own. A long-term economic slump, which is a possibility, could adversely affect the industry, however.

Only one major sector of the Services Industry -- Private Households -- is projected to decline. From 1976 to 1985, employment could drop from about 27,110 to 22,050, a decline of approximately 19 percent. As leisure time increases, as more labor-saving devices are developed, and as families and houses are reduced in size, the need for private household services will diminish. Other contributing factors are the increase in the minimum wage and the coverage of some private household workers under the Unemployment Insurance Program.

GOVERNMENT 1/
SIC 91 - 93

	Employment			Change	
	1976	Projected 1980	Projected 1985	1976-85	Average Annual
Government, Total	106,220	108,300	110,930	4,710	520
Federal Public Admin.	52,360	52,040	51,660	-700	-80
Postal Services	17,850	17,730	17,610	-240	-30
Other Public Admin.	34,510	34,310	34,060	-460	-50
State Public Admin.	15,540	16,580	17,880	2,340	260
Local Public Admin.	38,320	39,680	41,390	3,060	340

1/ Sums of items may not balance due to rounding.

NOTE: Government includes employees concerned with government administration and postal employees. All other government employees are distributed according to the type of work performed.

Overall, Government employment is projected to increase about 4½ percent between 1976 and 1985. Projected losses in the Federal sector should be more than offset by growth in the State and Local areas. These increases could result both from population growth and demands by the public for more and better services. Resistance to tax increases could moderate this growth somewhat. In addition, employment in Federal Public Administration may not decline as projected. Legislation concerning broad areas, such as consumer protection, welfare, national health insurance, public employment, etc. could result in increased employment. Also, the U.S. Postal Service announced late in 1979 that it had a money surplus, the first since the Service began. As a result, projected cutbacks may not be necessary.

PROJECTED EMPLOYMENT IN MISSOURI BY OCCUPATION

NOTE: Projections are for occupational demand only. A suitable method for projecting labor supply has not yet been perfected.

Occupations discussed in this section have been grouped into nine major categories. These are:

1. Professional, Technical, Kindred
2. Managers, Officials, Proprietors
3. Sales Workers
4. Clerical Workers
5. Crafts and Kindred Workers
6. Operatives
7. Service Workers
8. Laborers, Except Farm
9. Farmers and Farm Workers

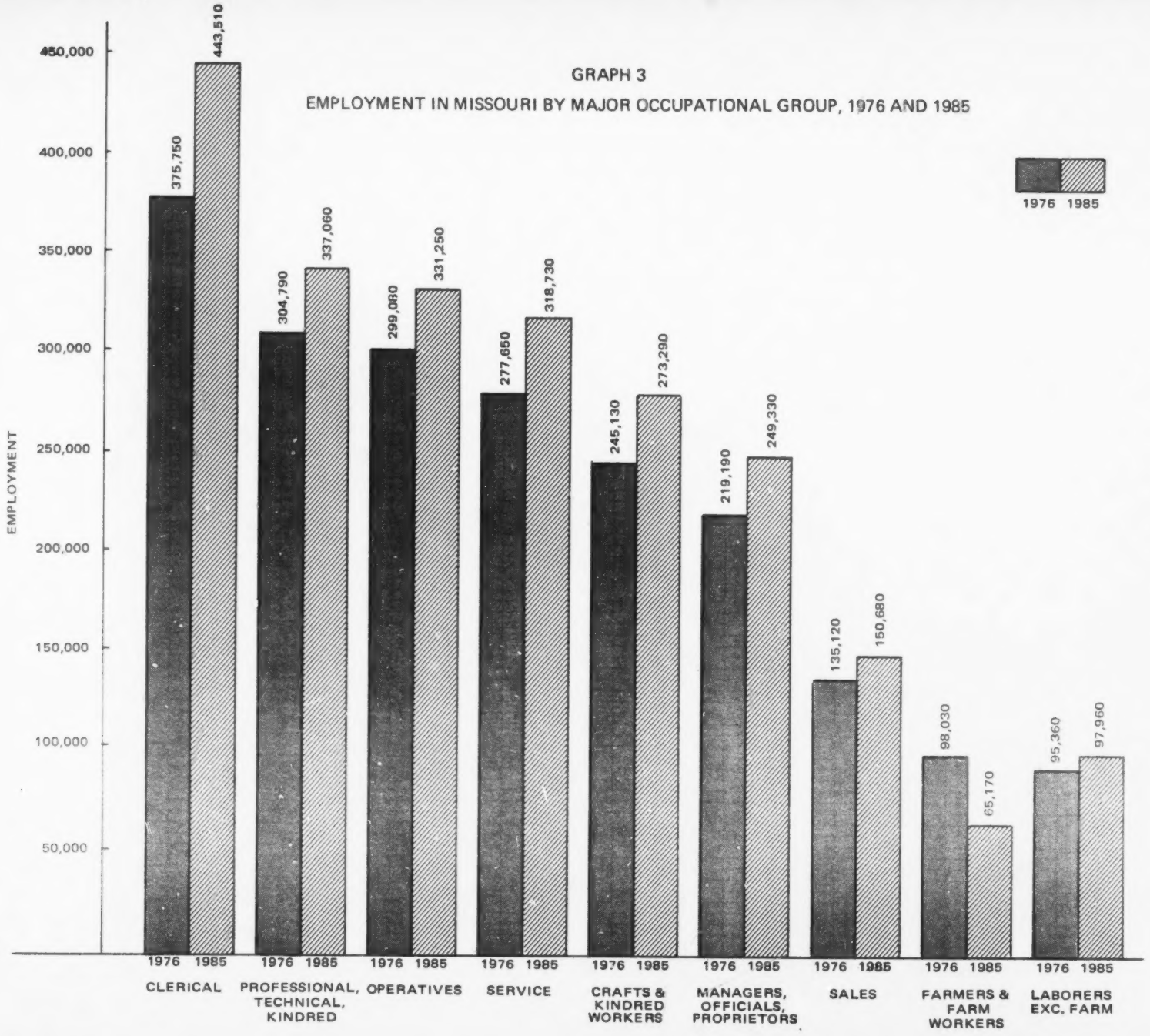
Base year and projected 1985 employment levels for these nine groups are shown in Graph 3.

Clerical Workers are the largest occupational group. In 1976 an estimated 375,5750 people held clerical jobs. If projections are accurate, approximately 443,510 clerical workers could be employed in 1985. This is an increase of about 67,760 people or 18 percent over the 1976-1985 time period. Smaller increases are projected for seven of the eight remaining categories. Only Farmers and Farm Workers is projected to decline (-32,860 or 33½ percent).

The focus of the occupational discussion is job openings. More average annual job openings (1976-1985) are expected in the Clerical category than in any other. The smallest number of openings may occur in the Farmers and Farm Workers group. Average annual job openings for each of the nine major occupational groups are shown in Graph 4.

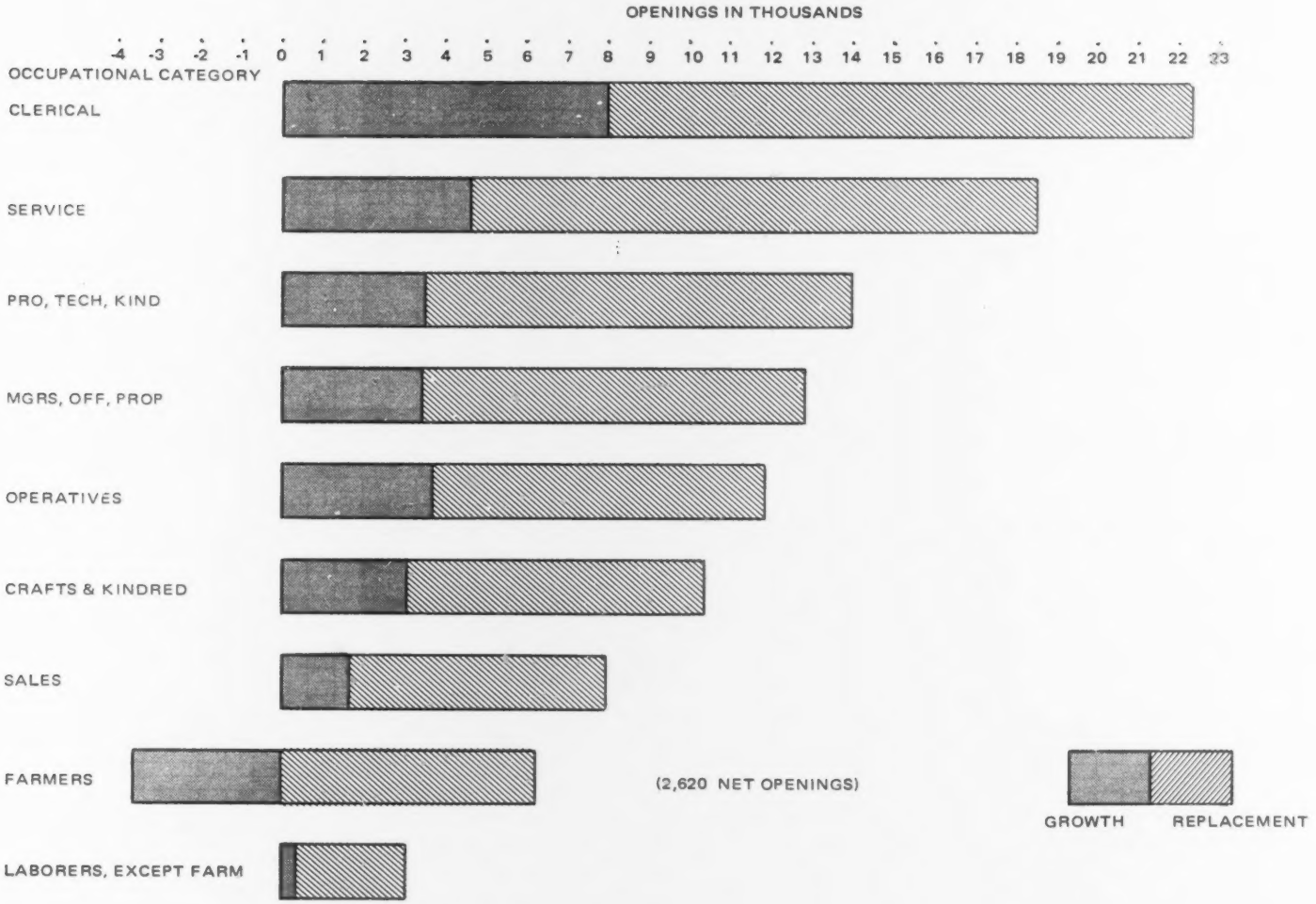
GRAPH 3

EMPLOYMENT IN MISSOURI BY MAJOR OCCUPATIONAL GROUP, 1976 AND 1985



GRAPH 4

AVERAGE ANNUAL JOB OPENINGS IN MISSOURI BY OCCUPATIONAL GROUP, 1976-1985



PROFESSIONAL, TECHNICAL, KINDRED 1/

	Employment				Average Annual Job Openings, 1976-1985	
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Professional, Technical, Kindred	304,790	319,150	337,060	3,590	10,240	13,830
Engineers, Technical	28,240	29,560	31,220	330	590	920
Engineers, Aero-Astronautic	3,490	3,650	3,810	40	40	70
Engineers, Chemical	1,180	1,220	1,290	10	20	30
Engineers, Civil	3,790	3,910	4,030	30	140	160
Engineers, Electrical	6,970	7,250	7,610	70	120	190
Engineers, Industrial	4,440	4,720	5,070	70	90	160
Engineers, Mechanical	4,010	4,170	4,390	40	90	130
Engineers, Metallurgical	310	350	390	10	10	20
Engineers, Mining	80	80	100	0	0	10
Engineers, Petroleum	10	10	10	0	0	0
Engineers, Sales	800	840	860	10	20	20
Engineers, Other	3,170	3,410	3,670	60	80	130
Life and Physical Scientists	3,960	4,200	4,500	60	80	140
Agricultural Scientists	290	290	290	0	10	10
Atmospheric, Space Scientists	300	300	310	0	10	10
Biological Scientists	990	1,110	1,260	30	20	50
Chemists	1,880	1,960	2,090	20	40	60
Geologists	220	220	240	0	10	10
Marine Scientists	100	100	100	0	0	0
Physicists and Astronomers	170	170	170	0	0	10
Life, Physical Scientists, NEC	30	30	30	0	0	0
Mathematical Specialists	690	770	830	20	30	40
Actuaries	150	150	190	0	10	10
Mathematicians	70	70	80	0	0	0
Statisticians	470	510	570	10	20	30
Engineers, Science Technicians	19,920	20,960	22,230	260	310	570
Agr, Biolog Tech, Exc Health	1,070	1,070	1,080	0	30	30
Chemical Technicians	1,270	1,310	1,330	10	20	30
Drafters	10,060	10,820	11,780	190	140	330
Electrical, Electronic Tech.	2,710	2,830	2,940	30	30	60
Industrial Engineering Tech.	360	400	430	10	10	20
Mathematical Tech.	10	10	0	0	0	0
Mechanical Engineering Tech.	290	290	310	0	10	10
Surveyors	910	1,030	1,150	30	20	40
Engineering, Science Tech, NEC	3,250	3,250	3,220	0	50	50
Medical Workers, Exc. Tech.	39,750	43,150	47,370	850	1,610	2,460
Chiropractors	760	840	960	20	70	90
Dentists	2,350	2,510	2,740	40	70	110
Dietitians	1,210	1,210	1,220	0	50	50
Optometrists	230	270	280	10	10	20
Pharmacists	3,110	3,270	3,440	40	220	260
Physicians	7,900	8,940	10,220	260	130	390
Podiatrists	40	40	40	0	0	0
Registered Nurses	19,620	21,100	22,980	370	880	1,250
Therapists	3,760	4,200	4,770	110	150	260
Veterinarians	750	710	660	-10	20	10
Other Medical and Health	30	70	70	10	0	10

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Health Technol and Tech	10,910	11,910	13,200	250	330	580
Clinical Lab Technol, Tech	4,740	5,260	5,890	130	150	280
Dental Hygienists	330	490	670	40	20	60
Health Record Technol, Tech.	570	610	680	10	20	30
Radiologic Technol, Tech	2,080	2,360	2,660	70	60	120
Therapy Assistants	100	100	100	0	0	0
Other Health Technol, Tech	3,090	3,130	3,210	10	80	90
Technicians, Exc Health	5,320	5,520	5,800	50	130	180
Airplane Pilots	1,680	1,840	2,030	40	30	60
Air Traffic Controllers	890	930	1,000	10	10	20
Embalmers	180	180	160	0	10	10
Flight Engineers	120	120	150	0	0	10
Radio Operators	1,410	1,370	1,320	-10	50	40
Tool Programmers, Numerical	110	110	120	0	0	0
Other Technicians, Exc Health	930	970	1,020	10	20	30
Computer Specialists	9,630	10,150	10,780	130	110	240
Computer Programmers	5,890	6,170	6,490	70	70	130
Computer Systems Analysts	3,190	3,390	3,640	50	40	90
Other Computer Specialists	560	600	650	10	0	10
Social Scientists	4,290	4,530	4,860	60	100	160
Economists	1,760	1,840	1,940	20	40	60
Political Scientists	30	30	40	0	0	10
Psychologists	1,910	2,030	2,220	30	40	70
Sociologists	100	100	70	0	0	0
Urban and Regional Planners	390	430	470	10	10	20
Other Social Scientists	110	110	110	0	10	10
Teachers	83,790	83,630	83,430	-40	3,090	3,050
Adult Education Teachers	1,330	1,410	1,490	20	50	70
College and University Teachers	11,130	10,010	8,610	-280	240	-40
Elementary School Teachers	36,500	38,180	40,310	420	1,680	2,100
Preschool, Kindergarten	5,100	5,700	6,420	150	210	350
Secondary School Teachers	24,920	23,720	22,230	-300	690	390
Teachers NEC, Exc Coll, Univer	4,810	4,610	4,360	-50	220	170
Writers, Artists, Entertainers	23,520	25,120	27,080	400	790	1,190
Actors	70	70	80	0	0	0
Athletes and Kindred Workers	2,030	2,150	2,290	30	70	100
Authors	510	510	540	0	10	20
Dancers	100	100	130	0	0	10
Designers	2,490	2,610	2,770	30	80	110
Editors and Reporters	3,500	3,900	4,380	100	150	240
Musicians and Composers	3,250	3,770	4,370	130	110	240
Painters and Sculptors	4,320	4,400	4,460	20	130	140
Photographers	2,260	2,300	2,340	10	70	80
Public Relations Specialists	2,660	2,900	3,180	60	100	150
Radio, TV Announcers	650	730	800	20	10	20
Writers, Artists, Entertain, NEC	1,680	1,720	1,760	10	70	80
Other Professional Technical	74,760	79,640	85,780	1,220	3,070	4,300
Accountants	23,990	24,790	25,750	200	870	1,070
Architects	1,370	1,650	1,980	70	50	120
Archivists and Curators	140	140	120	0	0	0
Clergy	6,470	7,910	9,730	360	440	800
Religious, Exc Clergy	1,400	1,720	2,110	80	90	170

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Farm Management Advisors	130	90	90	-10	0	0
Foresters, Conservationists	590	590	620	0	20	20
Home Management Advisors	130	130	120	0	10	0
Judges	490	450	380	-10	80	60
Lawyers	8,450	8,970	9,570	130	560	680
Librarians	2,790	2,790	2,780	0	130	120
Operations, Systems Research	2,830	3,070	3,350	60	40	100
Personnel, Labor Relations	8,220	8,940	9,830	180	250	430
Research Workers, NEC	3,040	2,560	1,970	-120	50	-70
Recreation Workers	1,860	2,100	2,370	60	60	110
Social Workers	8,850	9,690	10,720	210	330	530
Vocational Education Counselors	4,000	4,120	4,280	30	130	160

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

Between 1976 and 1985 it is estimated that the number of Professional and Technical people employed in Missouri will increase by more than 10½ percent. The 1985 projected employment level exceeds 337,000 with the Other Professional, Technical group being the largest sector; Teachers are a close second.

In terms of average annual job openings, three occupations stand out. These are Registered Nurses, Elementary Teachers, and Accountants. On the average at least 1,000 jobs may open annually in each of these occupations through the mid-1980's. Although most openings will result from replacement needs, growth will be a factor. This situation is unusual in Elementary Teaching. In the not-too-distant past, enrollment in elementary schools was declining. It now appears to be on the rise again though as people born during the baby boom begin families of their own. One factor that could have an impact on growth in the Teaching field, however, is resistance to tax increases.

Fairly large numbers of openings (more than 200 but less than 1,000) are also projected for the following:

Drafters; Pharmacists; Physicians; Therapists; Clinical Lab Technologists, Technicians; Preschool, Kindergarten Teachers; Secondary School Teachers; Editors and Reporters; Musicians and Composers; Clergy; Lawyers; Personnel, Labor Relations Specialists; and Social Workers.

Growth should be an important source of job openings for most of these except Secondary School Teachers. The demand for Drafters is expected to rise as manufacturers of automobiles, machinery, and other durable goods seek new more fuel-efficient designs for their products. Demands for medical and other health services personnel are growing due to the increasing number of elderly; expansion of public health, rehabilitative and preventive medicine programs; the coverage of more people by health insurance plans; and increasing industrial demands for medical personnel.

An increase in the number of Preschool, Kindergarten Teachers hinges basically on three factors. First, people born during the baby boom are establishing families. Second, due to the high cost of living, more and more families are finding it necessary for both parents to work. Finally, the number of single-parent families is rising. This parent almost always has to work outside the home to support the unit. Some provision must be made for child care.

Expansion in the communications field and increased leisure should contribute to the growing demand for Editors and Reporters and Musicians and Composers. Competition may be very keen in these fields though.

From 1976 to 1985, the number of Clergy in Missouri may increase by about 50 percent. This growth will probably occur primarily in the Catholic church. (Due to mergers and a downturn in financial support, net increases in the Jewish and Protestant sectors are not expected.)

As business firms become more complex and as unions increase their organizing efforts, the need for Personnel, Labor Relations Specialists will increase. Over the forecast period, average annual job openings in the field should total about 430 with roughly 42 percent of these coming from growth.

The number of Lawyers employed in the state should be up about 13 percent by 1985 compared to the 1976 estimate of 8,450. Increased business activity and population and growth of legal action in the areas of consumer protection, the environment and safety will be bases for growth.

Programs designed to aid a wide variety of groups -- the handicapped, the disadvantaged, juvenile and adult offenders, child abusers, drug addicts and alcoholics, the chronically ill, displaced persons, to name a few -- will be expanded through coming years. More Social Workers will be needed to carry out these programs. Close to 40 percent of the estimated 530 average

annual job openings in the field through 1985 could come from growth.

While large numbers of job openings are projected for Secondary School Teachers, almost all of these will be replacement-generated. The number of Secondary Teachers is expected to fall through the early 1980's as enrollment in the upper grade levels declines.

MANAGERS, OFFICIALS, PROPRIETORS 1/

	Employment				Average Annual Job Openings, 1976-1985	
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Managers, Officials, Proprietors	219,190	232,590	249,330	3,350	9,510	12,860
Buyers, Sales, Loan Managers	37,860	41,620	46,290	940	1,290	2,230
Bank, Financial Managers	10,520	11,560	12,860	260	470	730
Credit Managers	1,360	1,360	1,360	0	40	40
Buyers, Shippers, Farm Products	730	850	960	30	40	60
Buyers, Wholesale, Retail	3,310	3,750	4,320	110	120	240
Purchasing Agents, Buyers, NEC	4,570	5,010	5,520	110	170	270
Sales Manager, Retail Trade	8,030	8,670	9,480	160	210	370
Sales Manager, Exc Retail Trade	9,340	10,420	11,790	270	240	520
Administrators, Pub Inspectors	21,990	22,670	23,500	170	1,010	1,180
Assess, Control, Loc Pub Admin	700	660	640	-10	60	60
Construction Inspector, Pub	540	580	590	10	40	40
Health Administrators	3,310	3,590	3,890	70	180	240
Inspectors, Exc Construct Pub	2,590	2,630	2,660	10	100	100
Officials, Admins, Pub	6,390	6,350	6,330	-10	300	300
Postmasters and Mail Super	570	570	550	0	30	20
School Admin, College	1,280	1,200	1,110	-20	50	30
School Admin, Elem, Secondary	6,610	7,090	7,730	120	270	390
Other Managers, Officials, Props	159,340	168,300	179,540	2,240	7,210	9,450
Funeral Directors	880	840	830	-10	50	40
Mgrs, Superintendents, Bldg	2,280	2,560	2,930	70	230	300
Office Managers, NEC	8,210	9,330	10,710	280	350	630
Officers, Pilots, Pursers, Ship	170	210	260	10	10	20
Officials of Lodges, Unions	1,780	2,140	2,590	90	90	180
Railroad Conductors	480	560	660	20	30	50
Restaurant, Cafe, Bar Mgrs	12,980	13,420	13,950	110	540	650
Other Mgrs, Administrators	132,570	139,250	147,620	1,670	5,910	7,580

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

In 1976 an estimated 219,190 Managers, Officials, and Proprietors were working in Missouri. That figure could rise to about 249,330 by the mid-1980's. On the average, close to 13,000 managerial jobs may open annually during the forecast period. Employment prospects look best for Bank, Financial Managers; Sales Managers, Except Retail Trade; Office Managers; and Restaurant, Cafe, and Bar Managers. For all of these except Restaurant, Cafe, and Bar Managers, growth is projected to account for one-third or more of the yearly openings. An economic recession which is a real possibility for the early 1980's may have a detrimental impact, however, as least on Sales Managers and Office Managers. Declining sales and reduced business activities could mean fewer employment opportunities.

In general, very few openings are projected for the following: Credit Managers; Buyers, Shippers, Farm Products; Assessors, Controllers, Local Public Administration; Construction Inspectors, Public; Postmasters and Mail Supervisors; School Administrators, College; Funeral Directors; Officers, Pilots, Pursers, Ship; Railroad Conductors.

Some factors that could have an effect are:

1) decreased demands for personal and business loans due to high interest rates;
2) resistance to tax increases which may hold down growth in the Administration and Public Inspection sector;
3) an expected decline in the number of persons in the 18-24 or college age group;
4) efforts by the Postal Service to hold down costs.

SALES WORKERS 1/

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Sales Workers	135,120	142,040	150,680	1,730	6,340	8,070
Advertising Agents, Sales Wkrs	2,280	2,800	3,410	130	90	220
Auctioneers	140	140	150	0	10	10
Demonstrators	1,620	1,820	2,020	50	50	100
Hucksters and Peddlers	6,550	6,870	7,270	80	280	360
Insurance Agents, Brokers, Etc.	11,230	11,590	12,070	90	430	520
Newspaper Carrier and Vendor	2,520	2,320	2,050	-50	50	0
Real Estate Agents, Brokers	9,030	9,830	10,790	200	770	960
Stock and Bond Sales Agents	1,990	2,030	2,040	10	120	120
Sales and Sales Workers, NEC	99,760	104,720	110,870	1,240	4,550	5,780

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

During the 1976-1985 time period, employment in sales occupations is projected to increase about 11½ percent. By 1985 approximately 150,680 people could hold sales positions compared to the 135,120 estimated in 1976.

On the average, close to 8,100 sales jobs may open annually through the mid-1980's. Prospects look best for Real Estate Agents, Brokers where an estimated 960 new workers may be needed each year.

Currently, housing sales are severely depressed due to high interest rates and tight money supplies. Real Estate Agents, Brokers are feeling the pinch with fewer being needed to handle the reduced sales activities. These conditions will probably continue into the early 1980's. Interest rates are showing some signs of declining, however. A boom in the market will undoubtedly follow the easing of the financial situation. People who have foregone housing purchases because loans were unavailable or interest rates were too high will begin buying again. It is quite possible that the 1985 projected employment level for Real Estate Agents, Brokers will be attained and perhaps surpassed.

Job opportunities for Insurance Agents, Brokers over the 1976-1985 period should also be fairly good. It is expected that about 83 percent of the 520 average annual job openings will stem from replacement needs with growth accounting for the remainder. More insurance workers will be needed for the following reasons:

1) demands for tailor-made insurance packages are growing;
2) more single-person households are being established;
3) the number of persons 25 years of age and older, those who typically purchase insurance, is increasing;
4) as property and inventory values increase, more insurance will be purchased;
5) claims against insurance policies are expected to increase.

More than 200 average annual job openings are projected for Advertising Agents, Sales Workers and for Hucksters and Peddlers. Both of these groups are affected by economic fluctuations, however. Recession, a real possibility for the early 1980's, could result in advertising expenditures being cut. Job opportunities for these workers would probably be reduced.

Openings for at least two classes of workers -- Auctioneers and Newspaper Carriers and Vendors -- may be quite limited through the mid-1980's. Auctioneers should hold their ground over the 1976-1985 period. The number of Newspaper Carriers and Vendors, on the other hand, is projected to fall due to the use of more efficient systems of delivery and billing.

CLERICAL WORKERS 1/

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retirements	Total
Clerical Workers	375,750	405,870	443,510	7,530	14,800	22,330
Stenographers, Typists, Secre	105,740	115,980	128,770	2,560	4,410	6,960
Secretaries, Legal	1,850	2,250	2,740	100	90	190
Secretaries, Medical	1,480	1,920	2,470	110	70	180
Secretaries, Other	71,490	80,250	91,170	2,190	3,030	5,210
Stenographers	2,870	2,430	1,900	-110	100	-10
Typists	28,060	29,140	30,490	270	1,120	1,400
Office Machine Operators	20,230	19,070	17,630	-290	490	200
Bookkeeping, Billing Operators	1,340	1,420	1,470	20	50	60
Calculating Machine Operators	1,110	1,110	1,140	0	40	50
Computer, Peripheral Equipment	6,960	7,120	7,320	40	110	150
Duplicating Machine Operators	600	560	560	-10	20	10
Keypunch Operators	8,320	7,000	5,360	-330	210	-120
Tabulating Machine Operators	100	100	80	0	0	0
Other Office Machine Operators	1,810	1,770	1,710	-10	60	50
Other Clerical Workers	249,770	270,810	297,110	5,260	9,910	15,170
Bank Tellers	7,940	8,140	8,390	50	270	320
Billing Clerks	3,420	3,980	4,640	140	150	290
Bookkeepers	38,320	39,080	40,050	190	1,700	1,900
Cashiers	29,520	32,880	37,040	840	1,170	2,000
Clerical Assist, Soc Welfare	300	340	390	10	20	30
Clerical Supervisors, NEC	5,950	6,190	6,530	60	210	270
Collectors, Bill and Account	1,950	2,070	2,180	30	100	130
Counter Clerks, Exc Food	9,920	11,080	12,530	290	500	790
Dispatcher, Starter, Vehicle	1,730	1,890	2,050	40	50	80
Enumerators and Interviewers	1,240	1,440	1,660	50	60	100
Estimators, Investigators, NEC	11,340	11,700	12,190	90	440	530
Expeditors, Prod Controllers	4,660	4,980	5,390	80	110	190
File Clerks	7,120	7,280	7,450	40	290	330
Insurance Adjust, Examiners	3,610	3,770	3,980	40	70	110
Library Attendants, Assistants	3,700	3,660	3,610	-10	130	130
Mail Carriers, Post Office	6,260	6,380	6,540	30	160	190
Mail Handler, Exc Post Office	4,000	4,240	4,520	60	170	230
Messengers and Office Helpers	1,220	1,220	1,190	0	70	70
Meter Readers, Utilities	1,010	900	880	-20	20	10
Payroll Timekeeping Clerks	5,260	5,420	5,590	40	190	230
Postal Clerks	7,330	7,090	6,800	-60	190	130
Proofreaders	810	970	1,120	40	50	90
Real Estate Appraisers	700	740	800	10	50	60
Receptionists	11,300	12,140	13,180	210	510	720
Shipping, Receiving Clerks	10,220	10,900	11,720	170	260	430
Statistical Clerks	7,920	8,160	8,480	60	310	380
Stock Clerks, Store Keepers	13,210	13,530	13,900	80	360	430
Teacher's Aides, Exc Monitors	3,310	4,030	4,950	180	100	280
Telegraph Messengers	80	80	40	0	0	0
Telegraph Operators	260	220	190	-10	10	0
Telephone Operators	8,280	8,160	7,970	-30	340	310
Ticket Station, Express Agents	4,360	4,480	4,650	30	120	160
Weighers	1,110	1,070	1,060	-10	50	40
Misc Clerical Workers, NEC	32,430	42,670	55,450	2,560	1,670	4,230

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

Clerical Workers are the largest occupational group in the state. In 1976 an estimated 375,750 people held clerical positions. It is projected that by 1985, about 443,510 clerks will be working in Missouri, an increase of about 18 percent over the forecast period.

Largest in terms of average annual job openings are Secretaries, Other Than Legal or Medical (5,210), Typists (1,400), Bookkeepers (1,900), and Cashiers (2,000). Job opportunities should also be fairly good for Counter Clerks, Except Food; Estimators, Investigators, NEC; and Receptionists. Each of these occupations is projected to have more than 500 but less than 1,000 openings yearly.

Due largely to technological advances the outlook for a few clerical groups is quite dim. The demand for Stenographers may decline as dictation machines come into wider use. Advances in other data entry techniques and equipment may reduce the need for Keypunch Operators. Other occupations which may experience gradual declines are Duplicating Machine Operators; Tabulating Machine Operators; Meter Readers, Utilities; Telegraph Messengers; and Telegraph Operators.

Clerical occupations occur in almost every industry. Thus, the extent to which clerical workers are affected by economic fluctuations depends largely on where they are employed. Occupations which would probably be affected by business slumps are Shipping, Receiving Clerks; Stock Clerks, Store Keepers; and Weighers because employment in these occupations is directly tied to the volume of goods being moved.

CRAFTS AND KINDRED WORKERS 1/

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retirements	Total
Crafts and Kindred Workers	245,130	257,650	273,290	3,130	7,400	10,520
Construction Crafts Workers	69,940	74,980	81,320	1,260	2,450	3,710
Carpenters and Apprentices	21,460	22,340	23,400	220	880	1,090
Brick and Stonemasons and Appr	3,100	3,140	3,190	10	70	80
Bulldozer Operators	2,730	3,130	3,630	100	70	170
Cement and Concrete Finishers	1,730	2,090	2,520	90	50	140
Electricians and Apprentices	11,130	11,770	12,530	160	310	460
Excavating, Grading Mach Opr	6,400	7,080	7,900	170	200	360
Floor Layers, Exc Tilesetters	280	280	290	0	10	10
Painters and Apprentices	9,870	10,550	11,400	170	430	600
Paperhangers	470	510	600	10	40	50
Plasterers and Apprentices	350	350	330	0	10	10
Plumbers, Pipefitters and Appr	8,340	9,220	10,290	220	290	510
Roofers and Slaters	1,520	1,720	1,940	50	30	70
Structural Metal Craft Workers	2,070	2,390	2,800	80	50	130
Tilesetters	500	500	530	0	20	20
Blue Collar Workers Supvr, NEC	24,190	25,390	26,890	300	710	1,010
Metalworking Craft Wrkrs Exc Mec	25,310	26,590	28,230	320	670	990
Blacksmiths	190	150	110	-10	20	10
Boilermakers	820	1,020	1,260	50	30	80
Heat Treaters, Annealers, Etc	190	190	180	0	0	0
Forge and Hammer Operators	170	170	200	0	0	10
Job and Die Setters, Metal	1,300	1,380	1,510	20	30	50
Machinists and Apprentices	9,270	9,510	9,760	60	260	320
Millwrights	1,680	1,680	1,670	0	40	40
Molders, Metal and Apprentices	920	960	960	10	20	30
Pattern and Model Makers	970	1,010	1,060	10	30	40
Rollers and Finishers, Metal	170	170	190	0	0	10
Sheetmetal Workers and Appr	5,640	6,160	6,840	130	120	250
Tool and Diemakers and Appr	3,990	4,230	4,490	60	120	170

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Mechanics, Repairers, Installers	67,980	71,740	76,460	940	1,730	2,670
Air Cond, Heating, Refrig Mech	3,780	4,580	5,540	200	120	310
Aircraft Mechanics	3,360	3,880	4,530	130	60	190
Auto Accessories Installers	200	200	190	0	10	0
Auto Body Repairers	5,100	5,220	5,350	30	90	120
Auto Mechanics and Appr	23,170	23,970	24,990	200	510	720
Data Processing Mach Repairers	1,050	1,330	1,680	70	10	80
Farm Implement Mechanics	1,810	1,970	2,140	40	80	110
Heavy Equip Mech, Incl Diesel	15,530	15,850	16,250	80	420	500
Household Appliance Mechanics	3,140	3,220	3,350	20	90	120
Loom Fixers	10	10	20	0	0	0
Office Machine Repairers	1,370	1,570	1,770	50	30	70
Radio, Television Repairers	2,570	2,930	3,380	90	60	150
Railroad, Car Shop Repairers	1,490	1,570	1,630	20	50	70
Other Mechanics and Appr	5,400	5,520	5,650	30	210	240
Printing Trade Crafts Workers	12,820	12,940	13,110	30	370	400
Bookbinders	1,310	1,310	1,320	0	50	50
Compositors and Typesetters	4,290	4,130	3,980	-40	150	120
Electrotypers, Stereotypers	120	120	90	0	0	0
Engravers Exc Photoengravers	390	390	360	0	10	10
Photoengravers, Lithographers	1,620	1,740	1,930	30	30	70
Pressmen, Plate Prntrs, Appren	5,100	5,260	5,430	40	120	160
Transportation, Pub Util Craft	11,880	12,600	13,460	180	220	390
Elec Pwr Line Installer, Reprs	2,880	2,960	3,020	20	50	60
Locomotive Engineers	1,110	1,310	1,530	50	70	110
Locomotive Engineer Helpers	280	240	180	-10	10	0
Power Station Operators	310	270	240	-10	10	0
Telephone Installers, Repairers	6,430	6,950	7,570	130	80	210
Telephone Line Instalr, Splicer	870	870	910	0	10	10
Other Crafts, Kindred Workers	33,020	33,380	33,820	90	1,260	1,350
Bakers	3,290	3,290	3,300	0	130	130
Cabinetmakers	1,570	1,610	1,630	10	70	80
Carpet Installers	1,340	1,420	1,510	20	20	40
Crane, Derrick, and Hoist Opr	2,850	3,050	3,270	50	80	130
Decorators, Window Dressers	2,530	2,690	2,930	40	100	140
Dental Laboratory Tech	1,340	1,340	1,360	0	40	40
Furniture and Wood Finishers	370	370	370	0	20	20
Furriers	40	40	40	0	0	0
Glaziers	700	780	900	20	10	40
Inspectors, Log and Lumber	120	120	150	0	0	10
Inspectors, Other	3,730	3,810	3,900	20	110	130
Jewelers and Watchmakers	950	950	990	0	50	50
Millers, Grain, Flour, Feed	350	390	420	10	10	20
Motion Picture Projectionists	390	390	410	0	20	20
Opticians, Lens Grinder, Polishr	820	940	1,060	30	20	50
Piano, Organ Tuners, Repairers	180	180	190	0	20	20
Shipfitters	50	50	40	0	0	0
Shoe Repairers	1,180	1,140	1,080	-10	80	70
Sign Painters and Letterers	470	510	560	10	30	40
Stationary Engineers	4,760	4,520	4,210	-60	210	150
Stone Cutters, Stone Carvers	80	80	60	0	0	0
Tailors	1,280	1,240	1,160	-10	80	70
Upholsterers	1,750	1,710	1,640	-10	70	50
Crafts, Kindred Workers, NEC	2,910	2,790	2,650	-30	80	50

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

Employment in Crafts and Kindred occupations is projected to increase approximately 11½ percent between 1976 and 1985, rising from about 245,130 to 273,290.

More job openings are expected in the Construction Crafts subgroup over the 1976-85 period than in any other subgroup. Employment opportunities should be particularly good for Carpenters and Apprentices; Electricians and Apprentices; Painters and Apprentices; Plumbers, Pipefitters and Apprentices; and Blue Collar Worker Supervisors.

Most openings will arise from needs to replace workers who quit, die, or retire.

Based on the current construction situation, it is questionable whether or not the projected 1985 employment levels will be reached. Demands for many of these workers will continue high because existing structures must be maintained and repaired, but growth may be limited. Occupations relying heavily on new construction projects and major renovations will be most affected by a long-term slump in the building industry. Among these are Bulldozer Operators; Excavating, Grading Machine Operators; and Structural Metal Craft Workers.

Job openings for Floor Layers; Plasterers and Apprentices; and Tilesetters may be quite scarce through 1985. These occupations employ relatively few workers; the number needed for replacement is thus limited.

Among Metalworking Crafts Workers, Except Mechanics, job opportunities are projected to be best for Machinists, Sheetmetal Workers, and Tool and Diemakers. On the average, an estimated 150+ jobs will open annually in each of these occupations through 1985. Again, what direction the economy takes will largely determine whether or not the projected 1985 employment levels are reached. Current indications are that inflation and high interest rates will continue, and as a result, demands for goods may decline. If such is the case, layoffs involving the Metalworking Crafts could occur. In addition, technological advances – improved forging techniques and equipment; a trend toward machine molding; installation of larger, more efficient furnaces; greater use of computers to control plant equipment -- may limit job opportunities in several occupations.

An increase of about 12½ percent is projected for Mechanics, Repairers, Installers, bringing employment from roughly 67,980 in 1976 to 76,460 in 1985. Average annual job openings are expected to be greatest for Air Conditioning, Heating, Refrigeration Mechanics; Auto Mechanics; and Heavy Equipment Mechanics, Including Diesel.

At least two factors may be deleterious to these occupations, however. Included are:

1) a slump in the construction industry.
   Currently, high interest rates and tight money are causing businesses and individuals to postpone or cancel their construction plans. Air Conditioning, Heating, and Refrigeration Mechanics and some Heavy Equipment Mechanics are being affected. Should interest rates drop and loans become easier to obtain, construction activities may still not increase greatly due to the high rate of inflation. Many families, single individuals, and marginal businesses will not be able to afford new houses, offices, or plants.
2) the energy situation.
   The skyrocketing cost of gasoline and the rising prices of automobiles are causing people to drive less. Mandatory rationing and implementation of mass transit systems, real possibilities, will further reduce private automobile usage. Auto mechanics will undoubtedly feel the impact.

While inflation may be detrimental to some occupational groups in this sector, it may benefit others. When possible, more people and businesses are expected to repair rather than replace machinery, appliances, and equipment.

Job opportunities for at least two occupations -- Loom Fixers and Auto Accessories Installers -- are projected to be quite limited between 1976 and 1985. Because relatively few people are employed in these fields, replacement demands are small. In addition, the apparel and textile industries in the state are declining. Also, automobile owners may increasingly forego auto accessories' purchases in the interest of conserving energy. In addition, demands for auto accessories may decline as private vehicle usage drops. Another factor may be the high rate of inflation which reduces buying power; discretionary purchases of all types will be affected to some degree.

Most openings in the Printing Trade Crafts will be for Compositors and Typesetters and Pressmen, Plate Printers and Apprentices. However, fewer than 200 average annual job openings are expected in each of these occupations. Growth is expected to contribute few employment opportunities.

The Printing industry is one in which major technological advances have been made. The use of automated equipment is expected to hold down labor demands and reduce needs for some types of workers, most notably Compositors and Typesetters.

More than half of the openings for Transportation, Public Utilities Crafts Workers may be for Telephone Installers, Repairers. About 210 openings are projected annually in the occupation with more than half coming from growth. Demands for communications services are rising, particularly since travel costs are becoming prohibitive.

Factors that could limit job opportunities among Transportation, Public Utilities Crafts Workers are a long-term depression of the construction industry and efforts by utilities companies to hold down costs. In addition, technological advances may gradually reduce demands for some types of workers.

Among Other Crafts, Kindred Workers, job prospects appear best for Bakers; Crane, Derrick, and Hoist Operators, Window Dressers; Other Inspectors; and Stationary Engineers. From 130 to 150 average annual job openings are projected for each. Except in the case of Crane, Derrick, and Hoist Operators, growth will play only a minor role.

OPERATIVES 1/

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Operatives	299,080	313,400	331,250	3,580	8,350	11,920
Operatives, Exc Transport	217,090	228,250	242,150	2,790	6,180	8,960
Semiskilled Metalworking	24,480	25,680	27,190	300	550	850
Drill Press Operatives	950	870	800	-20	20	10
Furnace Tendrs, Smeltrs, Pourers	770	810	900	10	20	30
Grinding Machine Operatives	1,240	1,200	1,130	-10	30	10
Heaters, Metal	30	30	30	0	0	0
Lathe, Milling Mach Operatives	1,500	1,580	1,650	20	40	50
Metal Platers	1,110	1,110	1,150	0	20	20
Other Precision Mach Operators	670	790	920	30	10	40
Punch, Stamping Press Operatives	2,810	2,970	3,180	40	70	110
Solderers	640	560	450	-20	10	-10
Welders and Flamecutters	14,770	15,770	17,000	250	330	580
Semiskilled Textile	430	350	290	-20	10	0
Carding, Lapping, Combing Oprs	30	30	10	0	0	0
Knitters, Loopers, and Toppers	30	30	20	0	0	0
Spinners, Twisters, Winders	90	90	80	0	0	0
Weavers	40	40	30	0	0	0
Other Textile Operatives	250	210	150	-10	10	-10
Semiskilled Packing, Inspecting	27,310	30,230	33,840	730	890	1,620
Checkers, Examiners, Etc. Mfg	12,440	14,080	16,100	410	410	820
Graders and Sorters, Mfg	610	650	660	10	20	30
Meat Wrappers, Retail Trade	950	990	1,010	10	30	30
Packer, Wrapper, Ex Meat, Produce	13,110	14,350	15,870	310	420	730
Prod Grdr, Packer, Exc Fact, Farm	200	200	200	0	10	10
Other Operatives, Exc Transport	164,870	171,950	180,840	1,770	4,720	6,500
Asbestos, Insulation Workers	580	700	860	30	10	50
Assemblers	31,470	35,390	40,250	980	640	1,620
Blasters	210	210	240	0	10	10
Bottling, Canning Operatives	1,780	1,860	1,930	20	60	80
Surveyor Helpers	270	270	300	0	10	10
Clothing Ironers and Pressers	2,760	2,720	2,660	-10	120	110
Cutting Operatives, NEC	4,170	4,410	4,670	60	100	160
Dressmakers, Exc Factory	2,870	2,710	2,510	-40	230	190
Drillers, Earth	1,160	1,120	1,040	-10	20	10
Dry Wall Installers, Lathes	1,460	1,700	1,980	60	10	70
Dryers	60	60	60	0	0	0
Filers, Polishers, Sanders, Buffers	1,980	2,020	2,100	10	50	70
Garage Wrkrs, Gas Station Attend	11,830	11,710	11,590	-30	250	230
Laundry, Dry Cleaning Oprs, NEC	3,750	4,190	4,780	110	210	320
Meat Cutters, Butchers, Exc Mfg	5,000	4,760	4,430	-60	150	90
Meat Cutters, Butchers	2,380	2,540	2,730	40	70	110
Milliners	20	20	10	0	0	0
Mine Operatives, NEC	1,500	1,340	1,180	-40	30	-10
Mixing Operatives	1,730	1,770	1,800	10	30	40
Oilers, Greasers, Exc Auto	1,010	970	960	-10	20	20
Painters, Mfg Articles	3,900	4,380	4,980	120	90	210
Photographic Process Workers	1,900	2,300	2,760	100	70	160
Riveters and Fasteners	1,270	1,350	1,430	20	30	40
Sailors and Deckhands	160	160	190	0	0	10

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Sawyers	2,670	2,830	3,050	40	90	130
Sewers and Stitchers	17,390	17,630	17,930	60	750	810
Shoemaking Machine Operatives	4,500	4,220	3,870	-70	130	60
Furnace Tendr, Stokr Exc Metal	1,530	1,410	1,250	-30	60	30
Winding Operatives	1,390	1,590	1,880	50	40	100
Misc Mach Operatives	26,870	27,590	28,470	180	710	890
Operatives, NEC	27,330	28,050	28,950	180	730	910
Transport Equipment Operatives	81,990	85,150	89,100	790	2,170	2,960
Boat Operators	90	90	100	0	0	10
Bus Drivers	8,030	7,510	6,830	-130	350	210
Conductors and Opr, Urban Rail	10	10	10	0	0	0
Delivery and Route Workers	16,930	17,930	19,190	250	420	670
Fork Lift, Tow Motor Operatives	8,200	8,920	9,810	180	150	330
Rail Vehicle Operators, NEC	70	70	50	0	0	0
Parking Attendants	1,030	1,030	1,010	0	50	50
Railroad Brake Operators	710	790	860	20	20	40
Railroad Switch Operators	2,810	2,930	3,030	30	70	90
Taxicab Drivers, Chauffeurs	3,800	3,960	4,140	40	210	250
Truck Drivers	40,330	41,970	44,060	410	900	1,310

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

From 1976 to 1985, the number of Operatives working in Missouri is projected to increase about 11 percent. There were an estimated 299,080 workers in this category in 1976. By 1985 the figure may rise to 331,250. To what extent the economy recovers or slides deeper into recession will largely determine whether or not the projected 1985 level is reached.

The leading occupations, based on projected job openings, are Welders and Flamecutters; Checkers, Examiners, Etc., Mfg.; Packers, Wrappers, Except Meat, Produce; Assemblers; Sewers and Stitchers; and Delivery and Route Workers. Between 1976 and 1985, an average of more than 500 jobs may open yearly in each of these occupations. Growth could account for one third or more of the openings, except in the Sewers and Stitchers category, where growth is expected to be minimal.

Aside from an economic recession, the energy situation may also adversely affect many operative occupations. Reduced usage and declining demands for automobiles could have an impact on many metal workers as well as on Assemblers; Filers, Polishers, Sanders, Buffers; Garage Workers, Gas Station Attendants; Painters, Mfg. Articles; Riveters and Fasteners; and Parking Attendants.

In light of recent developments, projected employment in at least two occupations may have been underestimated. These are Asbestos, Insulation Workers and Bus Drivers. With energy conservation being emphasized as it is, Asbestos and Insulation Workers may grow by more than the estimated 30 yearly. An increase in the number of persons riding buses should cause the number of Bus Drivers to increase.

SERVICE WORKERS 1/

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Service Workers	277,650	295,890	318,730	4,560	14,070	18,630
Cleaning Service Workers	54,090	58,570	64,170	1,120	3,570	4,690
Lodging Quarters Cleanrs Exc Pr	3,640	5,320	7,400	420	270	680
Bldg Interior Cleaners, NEC	20,930	22,650	24,820	430	1,340	1,770
Janitors and Sextons	29,520	30,600	31,960	270	1,960	2,230
Food Service Workers	91,700	99,220	108,650	1,880	3,810	5,700
Bartenders	5,320	5,720	6,210	100	280	380
Waiter's Assistants	6,560	7,280	8,210	180	80	260
Cooks, Exc Private	26,400	28,800	31,800	600	1,370	1,970
Dishwashers	5,670	5,910	6,230	60	210	270
Food Counter, Fountain Wrkrs	10,070	11,270	12,750	300	390	690
Waiters/Waitresses	27,720	29,720	32,200	500	1,000	1,500
Food Workers, NEC Exc Private	9,950	10,550	11,250	150	490	630
Health Service Workers	45,030	49,430	54,890	1,100	1,940	3,030
Dental Assistants	2,670	3,190	3,820	130	120	250
Health Aids, Except Nursing	6,060	7,140	8,470	270	250	520
Health Trainees	610	410	180	-50	20	-30
Nurses' Aides, Orderlies	26,420	27,980	29,970	390	1,060	1,450
Practical Nurses	9,280	10,680	12,450	350	490	850
Personal Service Workers	37,020	39,620	42,890	650	1,990	2,650
Flight Attendants	970	1,250	1,600	70	50	120
Atten, Recreation, Amusement	1,490	1,570	1,630	20	80	90
Atten, Personal Service, NEC	2,210	2,250	2,320	10	160	170
Baggage Porters and Bellhops	650	730	790	20	50	60
Barbers	2,780	2,820	2,840	10	180	190
Boarding, Lodging Housekeepers	690	730	770	10	70	80
Bootblacks	40	40	20	0	0	0
Child Care Workers, Exc Private	9,040	11,400	14,320	590	640	1,230
Elevator Operators	1,070	870	660	-50	70	20
Hairdressers, Cosmetologists	12,900	12,660	12,380	-60	470	410
Housekeepers, Exc Private	2,830	2,830	2,870	0	150	160
School Monitors	380	420	500	10	10	30
Ushers, Recreation, Amusement	810	770	770	-10	10	10
Welfare Service Aides	1,160	1,280	1,430	30	60	90
Protective and Service Workers	29,800	31,560	33,770	440	1,510	1,950
Crossing Guard, Bridge Tenders	700	740	750	10	140	140
Firefighters	5,080	5,120	5,190	10	90	100
Guards	11,490	12,530	13,810	260	1,000	1,260
Marshals and Constables	100	100	70	0	10	0
Police and Detectives	11,540	12,220	13,080	170	230	400
Sheriffs and Bailiffs	900	900	870	0	60	50
Private Household Workers	20,000	17,480	14,370	-630	1,250	620
Child Care Workers	9,100	7,940	6,500	-290	480	190
Cooks, Private	360	360	320	0	30	20
Housekeepers, Private	1,680	1,360	990	-80	130	50
Launderers, Private Household	260	180	100	-20	20	0
Pri Household Cleaners, Servants	8,610	7,650	6,470	-240	600	360

1/ Sums of items may not balance due to rounding.
NOTE: NEC stands for "not elsewhere classified"

Employment in Service occupations is projected to increase about 15 percent (+41,080) between 1976 and 1985. All major groups except Private Household Workers are expected to grow.

The largest number of job openings is projected for Food Service Workers. On the average, about 5,700 openings may occur yearly through the 1976-1985 time period. Close to one-third of the openings may result from growth with replacement needs accounting for the rest. Most of the openings will be for Cooks and Waiters/Waitresses.

On the average close to 4,700 new Cleaning Service Workers may be needed yearly to keep pace with demand. It is estimated that about half of the openings in this group will be for Janitors and Sextons.

More than 3,000 openings are projected for Health Service Workers yearly. About 1,450 of these may involve Nurses' Aides/Orderlies.

Among Service occupations, the Health sector appears to be the fastest growing. Between 1976 and 1985, overall employment is projected to increase about 22 percent. Job opportunities for Health Service Workers should rise as the number of elderly increases; as more people are covered by health insurance programs; as the fields of public health, rehabilitation, industrial medicine, and mental health grow; and as people become more health conscious.

Among Personal Service Workers, opportunities appear best for Child Care Workers, Except Private. Nearly half of the more than 1,200 openings projected annually for Child Care Workers could result from growth. Increasing demand for this type of worker can be explained largely by a greater tendency for women to return to work soon after their children are born. As inflation continues, even more women can be expected to enter the labor force. Many families will need two incomes to make ends meet. The fact that children born during the 1950's baby boom are now establishing families of their own could also be a factor.

Guards lead the Protective occupations in terms of average annual job openings. It is estimated that about 1,260 new workers will be needed each year through 1985, primarily to replace those who have quit, died, or retired.

Only one group of Service Workers, those employed by Private Households, are projected to decline over the 1976-1985 time period. Possible reasons include:

1) greater use of day care centers and preschools-fewer Private Child Care Workers will be needed:
2) increased use of convenience foods and microwave ovens, reducing demands for Private Cooks;
3) increased leisure time;
4) the greater use of labor-saving devices and products;
5) the construction of smaller homes which require less care; and
6) an increase in the minimum wage.

While in general the prospects for Service Workers appear good, there are some factors that could limit employment opportunities, at least to a degree. Travel is expected to decline due to rising fuel costs. Among the workers apt to be affected are Flight Attendants and Baggage Porters and Bellhops. (Some airlines are already cutting back on staff.) Increasing inflation may cause people to eat out less often or to patronize fast food restaurants to a greater extent. Food Service Workers, except perhaps Food Counter, Fountain Workers could feel the pinch. Resistance to tax increases may limit such groups as Firefighters, Marshals and Constables, Police and Detectives, Sheriffs and Bailiffs.

LABORERS 1/

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Laborers, Except Farm	95,360	96,520	97,960	290	2,670	2,960
Animal Caretakers, Exc Farm	3,510	3,550	3,570	10	140	140
Carpenters' Helpers	1,300	1,260	1,200	-10	30	20
Constr Labor, Exc Carpenter Help	15,430	16,110	16,920	170	370	530
Fishers, Hunters and Trappers	200	160	130	-10	0	-10
Freight, Material Handlers	19,500	19,980	20,590	120	410	530
Garbage Collectors	1,090	1,210	1,340	30	40	70
Gardenrs, Groundskeepers, Exc Farm	9,300	9,140	8,930	-40	570	530
Longshore Workers, Stevedores	680	840	1,000	40	40	70
Timbercutting, Logging Workers	1,850	1,810	1,770	-10	50	40
Stock Handlers	22,560	22,760	22,990	50	440	490
Teamsters	110	70	40	-10	0	-10
Vehicle Washers, Equip Cleaners	4,320	4,320	4,300	0	100	100
Warehouse Laborers, NEC	4,910	4,950	5,000	10	110	120
Other Laborers	10,590	10,390	10,170	-50	390	340

1/ Sums of items may not balance due to rounding.

NOTE: NEC stands for "not elsewhere classified"

Employment among Laborers is projected to remain relatively stable through the 1976-1985 period. Losses in some groups should be offset by growth in others.

The largest number of job openings is projected for Construction Laborers, Except Carpenter Helpers; Freight, Material Handlers; Gardeners, Groundskeepers, Except Farm; and Stock Handlers. However, only about 500 openings in each of these occupations are expected yearly throughout the state.

Conditions that could adversely affect employment opportunities are 1) a long-term slump in the Construction industry; 2) a recession and the resulting slowdown in the movement of goods; 3) continued automation, although at present, businesses may be postponing equipment purchases due to high interest rates, tight money, and the threat of a recession.

FARMERS AND FARM WORKERS 1/

	Employment			Average Annual Job Openings, 1976-1985		
	1976	Projected 1980	Projected 1985	Growth	Quits, Deaths, Retire-ments	Total
Farmers and Farm Workers	98,030	83,430	65,170	-3,650	6,270	2,620
Farmers and Farm Managers	72,140	61,420	48,040	-2,680	5,380	2,710
Farmers (Owners and Tenants)	71,560	60,680	47,130	-2,720	5,350	2,630
Farm Managers	580	740	910	40	40	70
Farm Laborers, Farm Supervisors	25,880	22,000	17,140	-970	880	-90
Farm Labor Supervisors	360	320	300	-10	10	0
Farm Laborers, Wage Wrkrs	16,330	13,050	8,940	-820	590	-230
Farm Laborers, Unpaid Family	9,040	8,440	7,700	-150	280	130
Farm Laborers, Self-employed	150	190	190	10	10	10

1/ Sums of items may not balance due to rounding.

Between 1976 and 1985, employment among Farmers and Farm Workers is projected to drop roughly 34 percent. All sectors except Farm Managers and Self-employed Farm Laborers are expected to decline. Largely responsible are the continuing consolidation of small farms and increased mechanization.

Of the approximately 5,350 Farmers (Owners and Tenants) expected to separate from the labor force each year, about 2,630 will need to be replaced. However, people who do not have farms in their families or who lack capital are not apt to move into these positions.

METHODOLOGY

During 1972-73, initial industry and occupational projections were developed by the Department of Labor, Bureau of Labor Statistics under their Interim Projections Program. This program developed occupational demand estimates to 1980 for certain states and Standard Metropolitan Statistical Areas (SMSAs). These estimates were made using "Method A" which is explained in the Bureau of Labor Statistics' publication, Tomorrow's Manpower Needs (TMN), published in 1969.

These current projections to 1985 use "Method B" from the same publication, i.e. TMN, 1969. The primary difference in the two methods is that Method B uses state rather than national data.

These current projections are based upon certain economic assumptions as detailed in the "Background" part of this publication. They include:

1. The national unemployment rate will decline to 4.7 percent in 1980 and to 4.0 percent in 1985.
2. The number of employed persons is expected to increase by 1.8 percent from 1973 to 1980 and by 1.4 percent from 1980 to 1985.
3. There will be full recovery from the recession of 1974-1975. Real GNP will increase at an average rate of 3.8 percent during 1974-1985.
4. Energy will be relatively more expensive.
5. Efforts to solve major domestic problems will not have more than a marginal effect on long-term growth.
6. The institutional framework of the U.S. economy will not change radically.
7. Current social, technological, and scientific trends will continue, including values placed on work, education, income, and leisure.
8. No major event such as widespread or long-lasting energy shortages or war will significantly alter the industrial structure of the economy or alter the rate of economic growth.

Method B can be divided into several different steps. First, 1985 projections of state and area private wage and salary employment were made for approximately 200 separate industries. The base data for these projections are the Current Employment Statistics (CES) program 1/ and the ES-202 reports 2/. These initial projections are made using linear least

1/ The Current Employment Statistics (CES) program collects employment and wage data from employers within the state.

2/ The ES-202 is a report showing how many persons a firm paid unemployment tax on.

squares regression analysis because of its ease of interpretation and evaluation. The linear regression is of the form:

$$y = a + b_1 x_1 + b_2 x_2 + \cdots b_n x_n$$

Y = Local or State Employment
(dependent variable)
x = independent variables

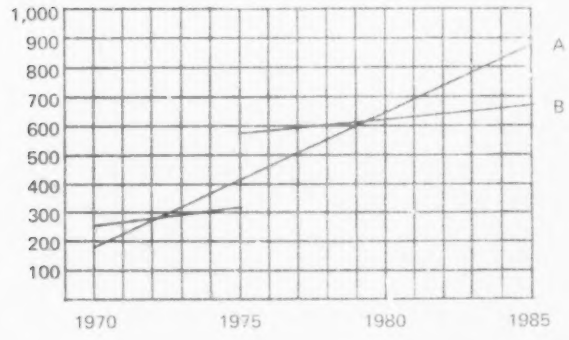
Regression analysis in this form uses the historical relationship between state or area employment and the independent variables. This relationship is assumed to continue in the future, and the projected values of the independent variables are used to estimate a projection for state or area industry employment.

The two independent variables used for Missouri industry projections were (1) national employment in the industry and (2) time. When projecting for SMSAs, the state employment in the industry was substituted for the national employment.

The second step was the review of these projections by labor market analysts for reasonableness and consistency. The projections were adjusted by the analysts using their knowledge of the different industries, the business environment, and their knowledge about current and probable future events that would change the industries' employment. Adjustments were also made on the basis of the analysts' familiarity with economic and other conditions in the state or area.

For example, a new plant locating within an area can cause a sharp increase in employment within that industry. If this opening of a new plant is part of the historical series used in the regression equation, an incorrect projection of an increase in employment can result. (See Figure 1).

FIGURE 1



A - Employment Projection by use of regression equation.

B - Actual trends eliminating new plant opening in 1975.

The third step involved adjusting the employment data to the "one person, one job" concept by excluding the secondary jobs of multiple jobholders; and adding an estimate of workers with a job but on unpaid leave in each industry. These adjustments are made using national factors developed by the Department of Labor. When making an adjustment of this type, it is assumed that the employment patterns within an industry in the state are similar to the pattern that exists at the national level.

Fourth, estimates of self-employed and unpaid family workers were made. The 1970 state (SMSA) employment base was adjusted by applying national trends, i.e., the proportion of these workers to the adjusted wage and salaried employment during the 1970-1976 and the 1976-1985 time periods. Estimates for persons employed by Federal, State and Local Government were made using the annual census of government. Government workers involved in activities peculiar to government were classified in the public administration sector. Government workers engaged in activities also performed by private enterprise such as education, medical services, construction, transportation, etc., are classified in their appropriate industry category.

Fifth, estimates for employment in agriculture; forestry and fisheries; direct selling; nonprofit organizations and private households, which are not available from either CES or the ES-202 were made. After this fifth step, we have final matrix employment estimates for each industry that cover all employed persons (including those on unpaid leave). They are on a one-person/one-job basis; and cover all classes of workers (private wage and salary, self-employed, unpaid family, and government).

Next, the total number of jobs by industry is translated to occupational estimates. This is done by the use of occupational composition patterns for all industries, which are summarized in an industry-occupational matrix.

In making projections, allowance is made for changing occupational structures based on studies of the way each industry has changed in the past, and is likely to change in the future. Future employment requirements are aggregated across all industries.

In some cases employment is projected on the basis of the relationship to certain independent variables rather than on the proportional representation in each industry. For example, employment of automobile mechanics is projected on the basis of the expected stock of motor vehicles. Projections developed in this manner are meshed with other occupational data in the matrix.

At this point we can estimate the number of job openings due to growth. Growth is the difference between the 1976 and 1985 levels of employment for each occupation. This growth is assumed to be spread evenly over this time period, and therefore we have an annual number of openings due to growth.

The final step is to estimate the number of openings in each occupation due to replacement needs which are vacancies due to death, retirement, or separation from the labor force. These needs are generated using Census information on the age-sex composition of each occupation. In general, replacement needs are greater than openings due to growth. Replacement needs are likely to be significant in those occupations that (a) employ many women, because large numbers leave the labor force each year to assume family responsibilities (although this appears to be changing) and (b) have a large proportion of older workers who have relatively few years of working life remaining.

Job openings are also created by "occupational transfers". For example, a Licensed Practical Nurse (LPN) becomes a Registered Nurse (RN). This fills an opening for an RN, but also

creates an opening for an LPN. Data for estimating job openings of this type is not available.

There are several possibilities of error in the projections listed for industry and occupations. The national economic assumptions that are the basis for these projections may not reflect actual future conditions. There is the error that is associated with any data based on sampling. The future openings and/or closings of large establishments in the state or areas which are not even suspected at the present time can change the employment outlook. The supply and costs of energy may affect the economic picture in unknown ways. The import of foreign goods in future years may have an unanticipated effect on different industries.

In summary, these projections for industry and occupational employment are based on the data that is presently available. The data has been reviewed, evaluated and modified by labor market analysts using their knowledge of present and anticipated future events. It is hoped that these projections will basically reflect the employment in industries and in occupations in future years. As such, these projections can best be thought of as approximations and guides to general trends of demand for occupational employment and not as absolute values of occupational requirements.